UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2017

OR

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

Commission File Number 001-37449

ALPINE IMMUNE SCIENCES, INC.

(Exact name of Registrant as specified in its Charter)

Delaware	**20-8969493**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
201 Elliott Avenue West, Suite 230 Seattle, WA	**98119**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (206) 788-4545

Securities registered pursuant to Section 12(b) of the Act: Common Stock, Par Value $0.001 Per Share; Common stock traded on the NASDAQ stock market

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

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES ☐ NO ☒

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. YES ☐ NO ☒

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

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

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

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☒
Emerging growth company	☒		

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

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based on the closing price of the shares of common stock on The NASDAQ Stock Market on June 30, 2017, was approximately $28.4 million. Shares of common stock held by each executive officer and director and by each other person who may be deemed to be an affiliate of the Registrant, have been excluded from this computation. The determination of affiliate status for this purpose is not necessarily a conclusive determination for other purposes.

The number of shares of Registrant's Common Stock outstanding as of March 20, 2018 was 13,846,084.

Portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission in connection with the registrant's 2018 Annual Meeting of Stockholders, which will be filed subsequent to the date hereof, are incorporated by reference into Part III of this Form 10-K. Such proxy statement will be filed with the Securities and Exchange Commission not later than 120 days following the end of the registrant's fiscal year ended December 31, 2017.

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Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements and information within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to the "safe harbor" created by those sections. In some cases you can identify these statements by forward-looking words such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "plan," "expect," or similar expressions, or the negative or plural of these words or expressions. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other "forward-looking" information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements. These forward-looking statements include, but are not limited to:

- *our ability to identify additional products or product candidates;*
- *our estimates regarding our expenses, revenues, anticipated capital requirements and our needs for additional financing;*
- *our ability to obtain funding for our operations;*
- *the implementation of our business model and strategic plans for our business and technology;*
- *the timing of the commencement, progress and receipt of data from any of our preclinical and potential clinical trials;*
- *the expected results of any preclinical or clinical trial and the impact on the likelihood or timing of any regulatory approval;*
- *the scope of protection we are able to establish and maintain for intellectual property rights covering our technology and product candidates;*
- *the timing or likelihood of regulatory filings and approvals;*
- *the therapeutic benefits, effectiveness and safety of our product candidates;*
- *the rate and degree of market acceptance and clinical utility of any future products*
- *our ability to maintain and establish collaborations;*
- *our expectations regarding market risk, including interest rate changes;*
- *developments relating to our competitors and our industry; and*
- *our expectations regarding licensing, acquisitions and strategic operations.*

These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in this report in Part II, Item 1A — "Risk Factors," and elsewhere in this report. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. These statements, like all statements in this report, speak only as of their date, and we undertake no obligation to update or revise these statements in light of future developments, except as required by law.

PART I

Item 1. Business.

Overview

Our company is focused on discovering and developing innovative, protein-based immunotherapies targeting the immune synapse to treat cancer, autoimmune/inflammatory disorders, and other diseases. Our proprietary scientific platform uses a process known as directed evolution to create therapeutics potentially capable of modulating human immune system proteins.

In our pre-clinical studies, our scientific platform has proven capable of identifying novel molecules, including single domains capable of modulating multiple targets. These molecules have demonstrated efficacy in *in vitro* and *in vivo* mouse models. We believe therapeutics generated by our scientific platform have the potential to provide benefit in a broad range of immune system disorders. We have chosen to focus our initial efforts in select areas with unmet medical needs in oncology and inflammatory/autoimmune diseases.

The human immune system is a complex system evolved to protect humans from external infections and harmful changes of internal cells. The Immunoglobulin Superfamily (abbreviated "IgSF") is the name given to the largest family of adhesion, costimulatory (activating), and inhibitory (blocking) proteins found on the surface of immunological, neurological, and other human cell types. Our scientific approach and platform are based upon IgSF protein units (referred to as "domains"). We believe the IgSF protein family is particularly valuable because many IgSF proteins naturally bind multiple binding partners, also referred to as "counterstructures".

The scientific discoveries resulting from our work to date have resulted from applying our technology to IgSF proteins to create what we call "Variant Ig Domains" or "vIgDs". Ours is a platform technology, and we believe our scientific platform represents a novel approach to targeting the immune system. Our scientists create vIgDs through directed evolution—an iterative scientific engineering process purposefully conducted to "evolve" an IgSF protein towards a desired therapeutic function. The potential to create therapies capable of working within a formed synapse, forcing a synapse to occur, or preventing a synapse from occurring are important, novel attributes of our scientific platform.

In cancer, the immune system is often suppressed by inhibitory signals (or quiescent due to lack of costimulatory signals) within the tumor microenvironment. We believe our vIgDs can stimulate the immune system by delivering an activating signal, blocking an inhibitory signal, or both. The potential of vIgDs to modulate multiple inhibitory and/or activating pathways simultaneously for the treatment of cancer is a powerful and novel attribute of our scientific platform.

In autoimmune and inflammatory conditions, the immune system has become overactive and mistakenly attacks healthy cells. Our vIgDs are potentially capable of delivering an inhibitory signal, blocking an activating signal, or both—potentially diminishing the severity of autoimmune and inflammatory conditions.

Our scientific platform creates a variety of molecules with broad potential applicability across diseases. vIgDs can be formatted in many different ways, including standard Fc fusion proteins, localized Fc fusion proteins, and monoclonal antibody fusion proteins as well as formulated as a Transmembrane Immunomodulatory Protein ("TIP") or as a Secreted Immunomodulatory Protein ("SIP") The ability to utilize different formats potentially broadens future applications of vIgDs in addition to potentially conferring useful therapeutic properties.

ALPN-101 is our lead program and is being developed for the treatment of autoimmune and inflammatory diseases. We are developing our ALPN-202 program for the treatment of cancer.

We expect to request regulatory approval to begin human clinical trials of ALPN-101 (ICOSL vIgD-Fc), our dual ICOS/CD28 antagonist, in the fourth quarter of 2018. We expect the target indications for ALPN-101 will be inflammatory and/or autoimmune disorders or both.

We expect to request regulatory approval to begin human clinical trials with a molecule from our ALPN-202 program in 2019. The ALPN-202 program is a CD80 vIgD-Fc, a dual PD-1/CTLA-4 antagonist with CD28 costimulation. The target indication for the ALPN-202 program will be the treatment of cancer.

In addition to advancing programs internally, we continue to seek partners who can bring therapeutic area experience, development expertise, commercialization capabilities, and funding allowing us to maximize the potential of vIgDs and our scientific platform.

In October 2015, we signed a research and license agreement with Kite Pharma, a Gilead company ("Kite"), granting Kite an exclusive license to two of our TIP programs for use in Kite's ECT programs. We received $5.5 million in up-front cash and are eligible to receive up to $530.0 million in developmental, clinical, and regulatory milestone payments in addition to royalties on any products containing our TIPs. In the collaboration, we provide the TIPs and perform *in vitro* testing, while Kite is responsible for *in vivo* testing, manufacturing, clinical trials and commercialization of any resulting therapies. This collaboration was renewed in October 2017.

Immunology Background

Our therapies are being evaluated for their potential to target immune system disorders, including oncology (cancer), infectious disease, and inflammatory/autoimmune disease. Based on preclinical data generated to date, we believe vIgDs have the potential to provide therapeutic benefit in a broad range of immune system disorders. We have chosen to focus our initial efforts on select therapeutic areas with unmet medical needs in oncology and inflammatory/autoimmune disease.

The human immune system is a complex system evolved to protect the host from external infection and harmful alterations of natural cells. At the most basic level, this system has evolved to detect antigens. Antigens are essentially anything causing the immune system to try and mount an immune response. Antigens vary from pathogens like a virus, mutated cells like those involved in causing cancer, or even otherwise healthy cells. In special situations such as transplanted organs or cells from a bone marrow transplant, the body sees antigens from these otherwise normal cells as "non-self".

The immune system determines if an antigen is harmful or not, and then acts accordingly—activating to destroy cells displaying the target antigen or inhibiting the immune system from doing anything if the target antigen is judged not harmful. The immune system has a memory for antigens so it can mount an activating or inhibitory response more quickly if a previously-seen antigen is encountered again.

The basic actors within the immune system are as follows:

- Antigen presenting cells ("APCs") responsible for gathering antigens and presenting them to the immune system.
- T cells armed to destroy cells the immune system has decided are harmful—including pathogens, cancer cells, and transplanted cells.
- B cells capable of recognizing foreign antigens and secreting antibodies to facilitate removal of the identified antigens.
- Regulatory T cells and suppressive myeloid cells which inhibit the immune system from responding, preventing the immune system from attacking healthy cells.

Importantly, the APCs in the immune system gather antigens to determine whether they are harmful or not. If the antigens are judged harmful by the immune system, cytotoxic (effector) cells are activated to eliminate the harmful cells. If the antigens are judged not harmful by the immune system, regulatory cells inhibit the immune system to ensure no normal healthy cells are killed.

Activation and inhibition can be thought of like applying the gas or pressing the brake in an automobile. When viewed through the lens of activation (costimulation) and inhibition, our scientists work to develop therapies seeking to do one of four things:

- Deliver an activating signal (press on the gas) to get a stronger immune response
- Block an inhibitory signal (release the brake) to get a stronger immune response
- Deliver an inhibitory signal (press on the brake) to slow down an existing immune response
- Block an activating signal (release the gas) to slow down an existing immune response

The above can also be expressed in more precise scientific terminology this way:

- Agonize a costimulatory receptor to press on the gas
- Antagonize an inhibitory receptor to release the brake
- Agonize an inhibitory receptor to press on the brake
- Antagonize a costimulatory receptor to release the gas

For infectious disease or cancer, patients need a stronger immune response so we seek to develop therapies delivering an activating signal, blocking an inhibitory signal, or both. If a patient has an inflammatory/autoimmune disease or has received a transplant, we seek to develop therapies delivering an inhibitory signal, blocking an activating signal, or both.

IgSF Proteins Defined

The IgSF is the name given to the largest family of adhesion, costimulatory (activating), and inhibitory proteins found on the surface of immunological, neurological, and other human cell types. Structurally predicted to number over 400 proteins, these cell surface and soluble molecules are broadly involved with recognition of antigens, assisting in the formation of the immune synapse, and performing costimulatory, co-inhibitory, and cytokine receptor signaling functions.

Figure 1 below shows several IgSF protein types ranging from a CD1 protein with a single “V” domain to the IgM protein which has a variety of “V” and “C” domains (referred to in scientific literature as “IgC” and “IgV” domains). This family of proteins underpins our technology because our scientific approach and platform are based upon engineering these IgC and IgV domains for therapeutic benefit.

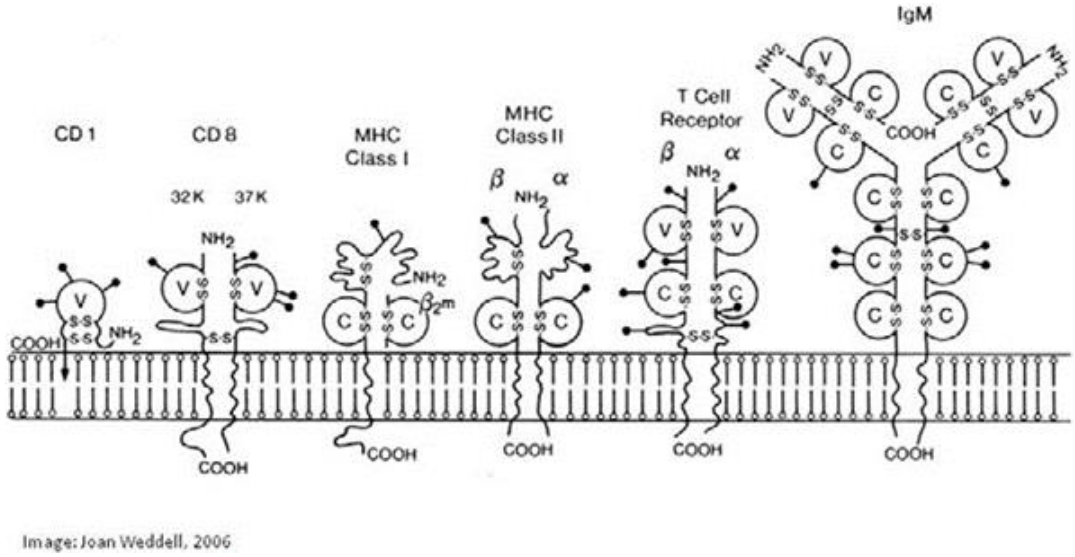


Figure 1

IgSF proteins like those in Figure 1 have evolved to play a primary role in the immune system of higher order species. This is reflected in the central components of the adaptive immune system—such as antibodies, MHC molecules, T cell receptors (“TCRs”), and B cell receptors—all being composed of IgSF domains. Other critical IgSF components of T cell responses include the TCR co-receptors, CD4 and CD8.

Current therapeutic advances in oncology block “checkpoint inhibitor” IgSF domains such as PD-1 and CTLA-4. The next generation of therapeutics target checkpoint inhibitor IgSF domains such as TIGIT, LAG-3, TIM-3, and BTLA. Critical costimulatory ligands of the B7 family are all IgSF proteins, as are their activating receptors CD28, ICOS, CD226, and

TMIGD2. IgSF domains participate in the most critical aspects of adaptive immunity. Figure 2 below shows a subset of the over 400 identified IgSF proteins and where they are typically found on tumor cells and immune system cells.

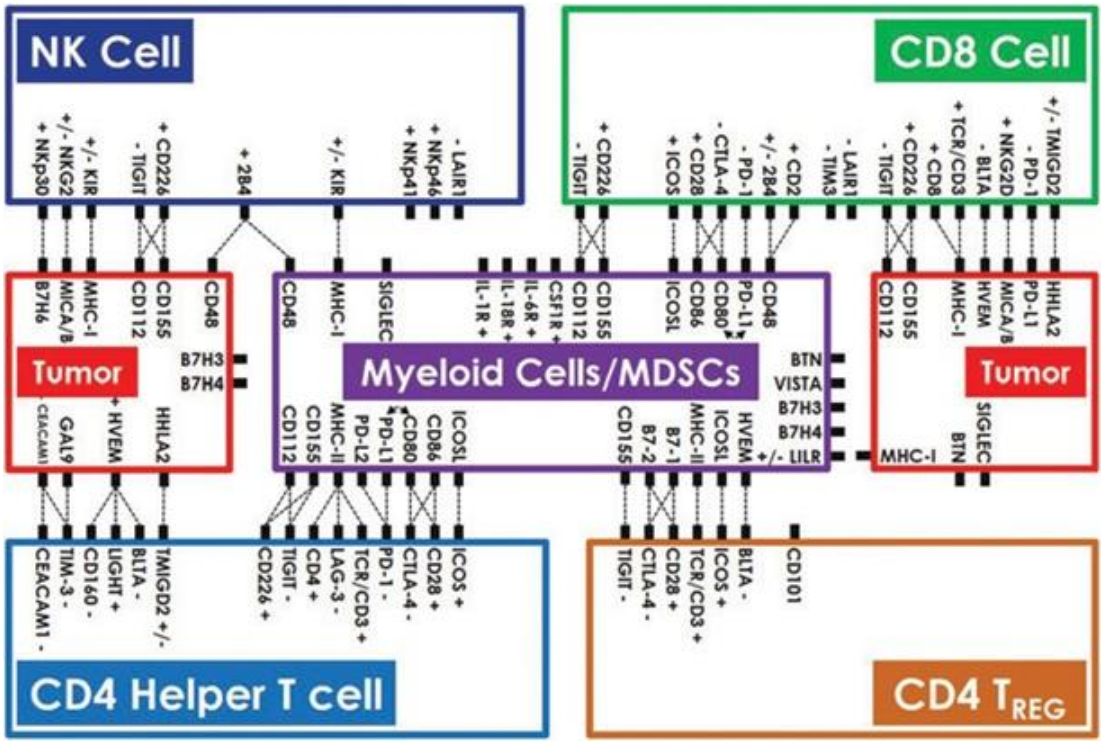


Figure 2

Figure 2 illustrates how some IgSFs appear on multiple cell types. For example, CD28 (and its ligand binding partners or "counterstructures", CD80 and CD86) and ICOS (and its counterstructure ICOSL) show up on CD4 helper T cells, myeloid/myeloid-derived suppressor cells, CD4 T_{REG} regulatory cells, and CD8 T cells. A vIgD targeting ICOS and CD28, to continue the example, could therefore potentially have activity across a number of these cell types.

Previous utilizations of IgSF domains as therapeutic products have been limited by the generally low affinities of native, unmodified IgSFs (also referred to as "wild-type" IgSFs) have for their various counterstructures. We believe our expertise in protein engineering and immunological function enables novel therapeutic mechanisms of action not previously appreciated by the biopharmaceutical industry.

Specifically, our scientists apply directed evolution via our scientific platform to strategically engineer single IgSF domains to potentially bind to multiple IgSF counterstructures. The ability to potentially bind multiple counterstructures with varying affinity has resulted in increased functional activity in our pre-clinical work and potentially represents the discovery of novel biology by using our scientific platform.

While the IgSF family also includes antibodies, and monoclonal antibodies are commonly used as therapeutics by the biotechnology industry, we are interested instead in the native, non-antibody, IgSF proteins secreted or expressed on the surface of human cells. We believe these members of the IgSF family are particularly valuable in terms of therapeutic potential compared to antibodies because IgSF proteins have often evolved to bind multiple counterstructures.

Even though our non-antibody vIgDs possess novel functional activity not associated with antibody reagents, we believe vIgDs will share many of the beneficial biochemical properties making antibodies attractive therapeutic molecules, such as stability, manufacturability, and flexible formatting—while retaining novel vIgD benefits and potentially enabling new opportunities to target human disease.

Immune Synapse Defined

The immune synapse is a temporary, dynamic interaction at the core of the immune system's response to antigens. When the synapse is created between two cells (like an APC and a T cell, or a tumor cell and a T cell), adhesion molecules hold cell membranes in tight formation to enable sufficient antigen presentation and/or receptor signaling. When this exchange works well, the body is adequately defended against a wide range of pathologies—including cancer and infectious diseases. When the exchange malfunctions, harmful cells are not destroyed or normal/healthy cells are mistakenly attacked.

The immune synapse is very small and often exists for just minutes. While intact, cells forming the synapse exchange a wide variety of information. Environmental cues, ligand/receptor expression ratios, and specific receptor orientations come together in a dynamic fashion to determine whether a T cell is going to respond to a given antigen or recognize it as harmless. Importantly, IgSF proteins are the principal players in the immune synapse—another reason we chose to focus our scientific platform on IgSF proteins.

Some of our research is targeted to these critical moments of T cell activation where vIgD-based therapeutics generated by our proprietary scientific platform can be used to modulate the spatial arrangement and signaling of multiple targets in the immune synapse. Other research projects seek to develop the ability to force synapses to occur, or prevent them from occurring, based upon the desired therapeutic outcome. This flexibility to work within a formed immune synapse, force an immune synapse to occur, or prevent an immune synapse from occurring is an important, novel attribute of our vIgDs.

Inflammatory/Autoimmune Disease

Inflammatory or autoimmune diseases like Type I diabetes, systemic lupus erythematosus ("lupus"), inflammatory myositis (for example, polymyositis and dermatomyositis), Sjögren's syndrome, and inflammatory bowel disease are a result of the immune system targeting the body's healthy tissues by mistake. There are more than 80 known types of inflammatory/autoimmune diseases, many of which are severely debilitating and/or life threatening. A related condition is when a transplant patient's body attacks the newly transplanted organ (graft rejection) or, in the case of stem cell transplants, the newly transplanted cells attack the patient's body (graft versus host disease). These are all immune system disorders caused by the immune system having too much activation or too little inhibition. For simplicity, we refer to autoimmune and inflammatory diseases as simply "inflammatory diseases" for the remainder of this section, or both.

Our therapeutic goal with inflammatory disease is to press on the brake by delivering an inhibitory signal or release the gas by blocking an activating signal. We believe one novel aspect of our proprietary scientific platform is the potential ability to create a single vIgD-based therapeutic capable of doing both. We do not currently have a therapeutic targeting inflammatory diseases in human clinical trials or on the market. However, based upon evidence from preclinical studies to date, we believe our scientific platform has the potential to produce vIgD-based therapeutics targeting inflammatory diseases.

Substantial progress has been made over the last decade in developing disease-modifying therapies to slow or stop disease progression in multiple inflammatory indications. Inhibitors of the pro-inflammatory cytokine TNFα, as well as approved drugs like abatacept and belatacept, have led to disease reductions and improvements in quality of life for patients with a variety of inflammatory disorders including rheumatoid arthritis, psoriasis, ulcerative colitis, Crohn's disease, and others.

Challenges in Inflammatory Disease

We believe there remains a large unmet need for improved efficacy in the treatment of inflammatory diseases. For example, in rheumatoid arthritis, where arguably the greatest advances in treating inflammatory disease have been made, patients frequently cycle through different biologic therapies and a recent meta-analysis found only just over half of patients on anti-TNFα therapies achieved at least a twenty percent improvement in disease activity. [1]

The need for novel therapies is particularly acute for patients with chronic diseases such as lupus, for which only one new drug has been approved by the FDA in the last 50 years. Belimumab, a monoclonal antibody inhibiting B-cell activating factor, was approved in 2011 by the FDA despite concerns the therapy resulted only in modest improvement for lupus patients. Belimumab demonstrated a reduction in corticosteroid usage and an acceptable safety profile, but was not approved for use in severe active lupus nephritis or severe active central nervous system lupus.

[1] Lloyd, et al, *Rheumatology (Oxford*), v 45 n 112, December 2010, pp 2313-21

Graft versus host disease ("GvHD"), with a mortality rate of 75% or more, is an inflammatory disease which has been particularly challenging for development of new therapies and where there exists a substantial unmet need. Over the last two decades, a multitude of therapies including stem cell transplant, IL-2 antagonists, antithymocyte globulin, anti-CD52, anti-TNF therapies, and others have been studied. While ibrutinib was recently approved for chronic GvHD, there are no approved therapies for the treatment of acute GvHD and a significant number of chronic GvHD patients did not have durable responses to ibrutinib.

How We Are Different

We currently plan to develop therapeutics for inflammatory diseases by focusing on key activating and inhibitory IgSFs driving aberrant immune reactions. For these diseases, we plan on using our proprietary scientific platform to create vIgD-based therapies intended to affect the immune synapse (usually by preventing its formation) and/or interacting directly with those IgSF proteins causing immune system reactions to healthy tissues. We do not currently have a therapeutic targeting inflammatory diseases in human clinical trials or on the market. However, based upon evidence from preclinical studies to date, we believe our scientific platform has the potential to produce therapeutics targeting inflammatory diseases.

Although some signaling between cells occurs between singular ligand and receptor pairs, there are an increasing number of examples where signaling between cells involves multi-protein complexes consisting of three or more proteins recognized in cytokine, adhesion, inhibitory, and other signaling pathways. IgSF domains are exquisitely evolved for such complex interactions. Our next-generation therapies target multi-protein complexes and could potentially facilitate transformative patient care by forcing complexes consisting of the desired protein combinations.

Our scientific platform is flexible enough to be able to take combined approaches like blocking costimulatory proteins ICOS and CD28. When formatted properly, the resulting domain could potentially work in the immune synapse—or potentially prevent an immune synapse from forming—thereby potentially simultaneously decreasing the activating signal and sparing the inhibitory signal, ideally reducing or eliminating symptoms of inflammatory disease.

Oncology

Cancer is broadly defined as normal human cells growing in an uncontrolled fashion and capable of spreading this aberrant activity elsewhere in the body. Cancer can also be seen as a failure of the immune system to recognize transformed, harmful cells. Tumors develop because cancer cells learn to evade the immune system or dampen immune system activity to such a low level the tumor grows despite an otherwise healthy immune system.

Traditional cancer treatments have focused on directly killing tumor cells through the use of toxic chemicals like chemotherapy or other approaches like irradiating cells. The 2010 FDA approval of sipuleucel-T marked a meaningful change in how tumors are treated. Sipuleucel-T represented the FDA's first approval of an active cancer immunotherapy. It was designed to help a patient's immune system attack prostate cancer cells. Brought to FDA approval by one of the founders of our company, the approval of sipuleucel-T energized the field to focus more closely on how to make use of the immune system to treat cancer.

The subsequent development of therapies targeting "checkpoint inhibitors" or pathways responsible for inhibiting an immune response has resulted in several recent FDA-approved therapeutics. Targeting checkpoint inhibitors, thereby releasing the brake on the immune system, has provided meaningful efficacy for a subset of cancer patients.

The first drug approved in this therapeutic class was ipilimumab, an antibody interfering with inhibitory signals from an IgSF protein called CTLA-4. In 2014, two antibodies blocking the inhibitory IgSF protein PD-1— pembrolizumab and nivolumab—were approved in multiple indications. Antagonists of the IgSF protein PD-L1 followed (atezolizumab, avelumab, and durvalumab).

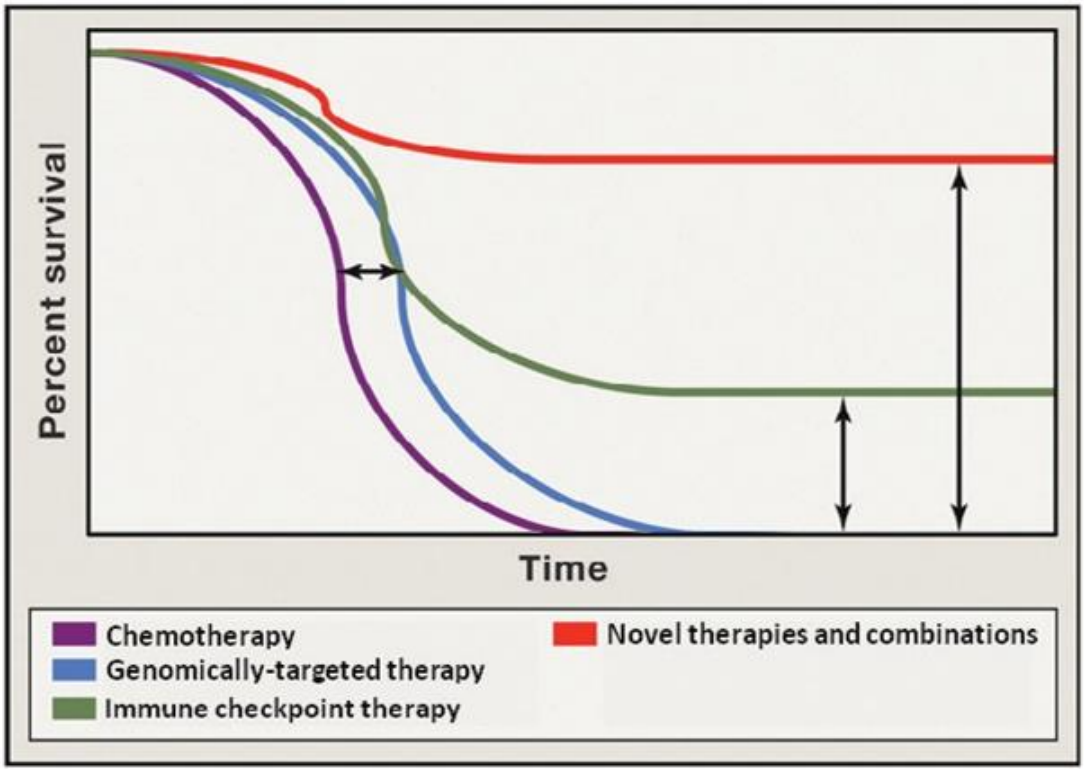
In addition to modulators of these IgSF proteins, several other immunotherapies for cancer are either approved or in development including adoptive T cell therapies (CAR-T, TCR and autologous T cells called "TILs"), cancer vaccines, and oncolytic viruses.

As noted in more detail below, we believe there is a significant unmet medical need for cancer patients for whom existing immunotherapies fail to help or who relapse after initial success on these existing immunotherapies.

Challenges in Oncology

While checkpoint inhibitors have meaningfully changed cancer treatment, their benefit is only observed in a minority of patients and response rates vary substantially by tumor type, disease stage, and other factors. For example, observed response rates for PD-1 inhibitors in melanoma and non-small cell lung cancer are among the highest and range from 20%–40%—possibly due to the higher mutational burden frequently found in these tumors. In contrast, response rates of checkpoint inhibitors in ovarian cancers are lower, with clinical data to date demonstrating a 10%–15% response rate. Therapies designed to stimulate the immune system to attack tumors often have their effect diminished by a tumor's evolved ability to generate redundant inhibitory signals, or dampen costimulatory signals, effectively shutting down productive immune responses before the tumor can be cleared.

One of our goals is to "raise the tail of the survival curve" for cancer patients while potentially minimizing further adverse events. In Figure 3, the arrows represent this concept of "lifting the tail"— achieving a higher percentage of patients with durable relief from their cancer diagnosis.



Adapted from: Cell, v161, n2. April 2015.

Figure 3

While the field of cancer immunotherapy advanced significantly since the approval of sipuleucel-T, no single immunotherapy is capable of creating a durable anti-tumor response in more than a third of cancer patients—and some types of cancer continue to be resistant to any immunological approach. The field has initially tried to address this unmet medical need by combining different checkpoint inhibitors—essentially trying to release the brake twice as hard. Despite several attempts, however, this approach has not resulted in success across a broad variety of cancers.

How We Are Different

Our proprietary scientific platform is potentially capable of engineering wild-type IgSF proteins for therapeutic benefit and with potentially novel attributes and activity. For example, our platform creates novel IgSF mutants we call vIgDs designed to be capable of antagonizing (blocking) an inhibitory receptor while agonizing (delivering) an activating signal,

boosting the immune system's response to cancer cells. We are evaluating whether these vIgD-based therapeutics will work in patients where there might be too much inhibition or too little activation in the tumor micro-environment (abbreviated "TME"), or both.

We believe antagonizing inhibitory signals to release the brakes on the immune system is important, but insufficient for most patients. One way we are different than approved immune-oncology therapeutics is our focus on agonizing activating receptors, pressing on the gas to stimulate the immune system. A potentially unique attribute of our scientific platform is its ability to create single vIgDs capable of both antagonizing inhibitory receptors (release the brake) and agonizing activating receptors (press the gas).

We are also developing molecules intended to force synapses to form, delivering activating signals, blocking inhibitory signals, or both. We intend to evaluate whether these types of therapies could potentially work in situations where there might be insufficient T cells in the TME.

Our early research suggests working with vIgDs engineered through our scientific platform potentially create a more powerful immune system response compared to unmodified, wild-type IgSF proteins. We do not currently have a therapeutic targeting cancer in human clinical trials or on the market. However, based upon evidence from our preclinical studies to date, we believe our scientific platform has the potential to produce vIgD-based therapeutics targeting cancer.

Our Scientific Platform

Our proprietary scientific platform is potentially capable of engineering native IgSF proteins for use as therapeutics. For example, vIgDs can be engineered with improved binding to single or multiple protein partners or counterstructures. A core potential advantage of our scientific platform is creating vIgDs with the ability to potentially strengthen binding to one counterstructure while losing or diminishing binding to another—potentially increasing selectivity for novel therapeutic outcomes. These protein engineering efforts may also potentially uncover binding to previously under-appreciated counterstructures with the potential to positively impact therapeutic efficacy.

Directed Evolution

We recognize how evolution resulted in a finely-tuned and delicately-balanced human immune system in general, and the important role of complex IgSF protein interactions in particular. Our aim is to leverage our scientists' expertise in protein engineering and understanding of the immune system. Our scientific platform seeks to engineer or evolve natural, wild-type IgSFs in a manner conferring a therapeutic benefit when administered to patients.

Our scientists utilize yeast display protein library strategies to identify variants of wild-type IgSFs with desired binding characteristics. The power of yeast library approaches derives from the fact libraries can contain up to 10^9 protein variants with either random or rationally targeted amino acid mutations at any desired frequency per variant. At this level of protein diversity, it is usually possible to find at least a small fraction of variants with desired binding profiles. Thus, this technology can potentially provide us with protein variants of interest we can later optimize to potentially achieve the desired biology. We call this process "directed evolution" and its purpose is to alter the domains on wild-type IgSF proteins to achieve a desired therapeutic goal. This process is our proprietary scientific platform and we call the altered domains produced by our scientific platforms "vIgDs".

We believe the key advantages to our approach are:

- potential broad applicability since many critical immuno-regulatory proteins are composed of IgSF members;
- potentially rapid and precise selection of desired binding properties; and
- potential early elimination of unstable proteins because the yeast display platform biases recovery of affinity-modified proteins towards a well-folded, non-aggregated, and stable subset of proteins;

Figure 4 shows the work flow process of directed evolution in our scientific platform. We start with a wild-type IgSF protein and then enter a cycle of library generation and yeast display. Flow cytometry or other methods are used to sort for yeast clones displaying variants with desired binding characteristics. Biologic and biophysical assays of purified proteins assess biological function and manufacturing characteristics. The end product is an optimized vIgD. Additional cycles can be carried out by building next generation libraries from the output of prior libraries to result in further optimization.

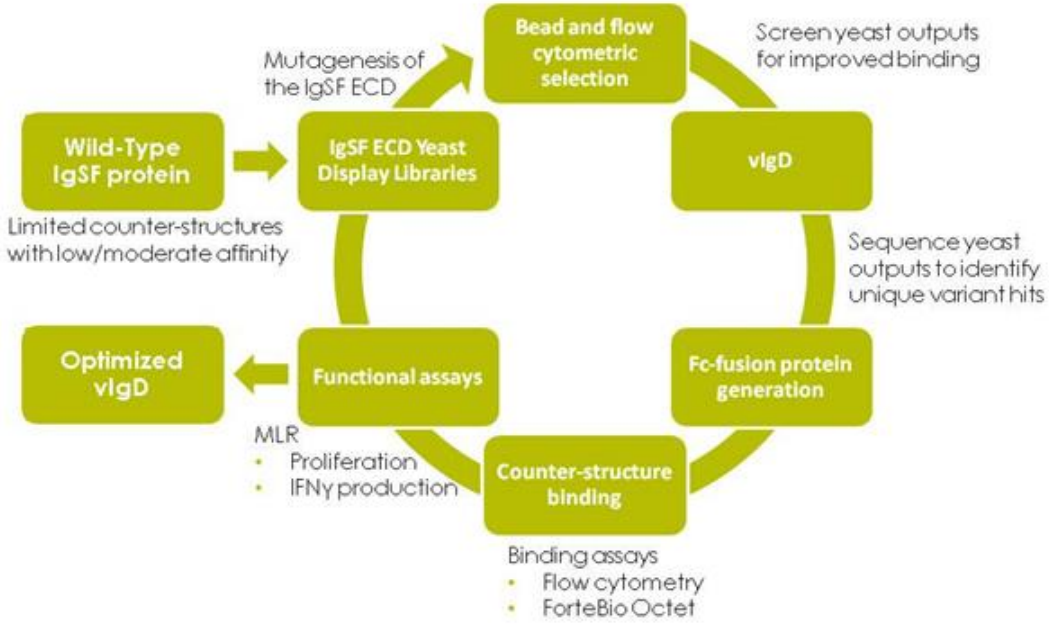


Figure 4

A key skill in our directed evolution approach is our ability to construct productive libraries. When the structure of the wild-type IgSF protein is available, potential predictions can be made regarding the optimal amino acid alterations necessary to obtain the desired binding profile. We use these predictions to create a “rationally designed” library featuring mutations introduced in specific regions of the target IgSF protein. When such information is not available, mutations can be randomly introduced into the target protein at any desired average number of mutations per variant creating a “random” library. When our scientists apply these library designs, either approach can yield useful candidate proteins.

Our scientific platform is generally able to improve upon native IgSF activity regardless of whether natural binding affinity is weak or strong. When starting affinity is very weak, techniques employed by our scientists have accomplished several thousand-fold increases in binding affinity with sometimes as few as two library generation cycles. Even when starting affinity is very high, our scientific platform can still improve binding affinities. The same general strategies can be used when the desired therapeutic profile requires reduced affinity compared to the wild-type IgSF.

Our scientists rely on results from various *in vitro* analyses using human immune cells to guide outputs from our scientific platform. Upon the completion of one generation of the directed evolution process described above, the identified proteins are reformatted from display on yeast to soluble Fc fusion proteins produced in mammalian cells, and then tested *in vitro* with human immune cells. Candidates for further discovery research are identified by their desired immune system activity compared to the activity of the wild-type IgSF protein or other reference molecules. Those engineered vIgDs most strongly outperforming wild-type IgSFs and/or reference molecules may then be potentially used as the basis for second- or even third-generation directed evolution cycles.

Discovering New Biology

We believe the advantages of our scientific platform allow us to identify new biology. Our lead program is an example of this where a single ICOSL domain, normally only binding ICOS with any physiological relevance, is engineered into a vIgD able to bind both ICOS and CD28. We have replicated this type of novel biology in other programs directed to disclosed and undisclosed targets.

In preclinical animal models, we often find our engineered vIgDs can outperform the relevant wild-type IgSF protein and/or other reference molecules when the vIgD differs from the wild-type IgSF by as few as one to three mutations. Based on *in silico* analyses and analogous FDA-approved therapies, we do not believe vIgDs are unusually susceptible to immunogenic effects causing adverse events or loss of drug activity.

Highly Productive

Our scientific platform is highly productive. A single library run through the directed evolution process can potentially create vIgDs useful in both oncology and inflammatory/autoimmune conditions. While this potential advantage is not universal for every IgSF target, our experience is most of our successful discovery campaigns result in vIgDs applicable to a broad variety of therapeutic protein designs and indications. We believe this is a novel attribute given most other platforms require each molecule to be painstakingly purpose-built for each intended therapeutic area.

Potential vIgD Formats

We believe our vIgDs are highly flexible. In many cases, a single affinity-maturation campaign can result in potential multiple domains suitable for use in the formats such as those appearing in Figure 5.

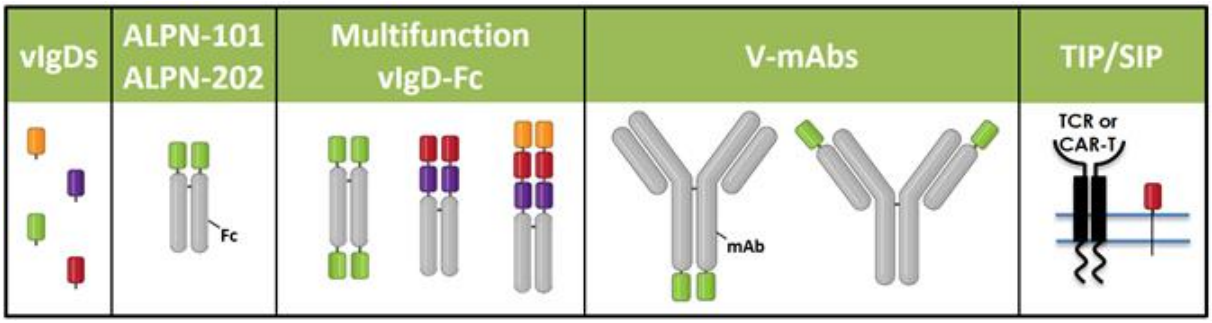


Figure 5

Which format is chosen depends upon the therapeutic application of the vIgD, the desired product profile, and/or the needs of our current and future partners. Figure 5 is not a complete listing as some formats in our discovery program remain undisclosed.

vIgD-Fc

The vIgD-Fc fusion protein is the simplest format. Our lead autoimmune/inflammation program, ALPN-101, and lead oncology program, ALPN-202, are both examples of vIgD-Fc formats.

The IgV(s), IgC(s), or both of an engineered vIgD protein are fused to an Fc backbone. Combining vIgDs with antibody Fc domains to make Fc fusion proteins potentially allows better expression, facilitates purification, and improves pharmacokinetic (dosing) properties. Fc fusion proteins are a standard format in the industry, with examples such as etanercept, abatacept, and belatacept. In most of our early programs, the Fc backbone is effectorless. In certain situations, the Fc backbone can be designed to have effector function, potentially capable of depleting problematic cell populations. A vIgD-Fc could potentially be administered intravenously, subcutaneously, topically, or other methods

Multifunction vIgD-based Molecule

Multiple vIgDs can be combined or “stacked” together with or without an Fc backbone to create a multifunctional, vIgD-based molecule. With the potential to make use of novel biology discovered using our scientific platform, an Fc fusion with just two domains can potentially affect three, four, or more IgSF targets.

Unlike most other approaches trying to target multiple checkpoints or costimulatory molecules, or both, our vIgD-based therapeutics are not traditional antibody constructs or large and unwieldy scaffolds. In general, all of our vIgD-based therapeutics utilize domains appearing very much like the native IgSF proteins.

V-mAb

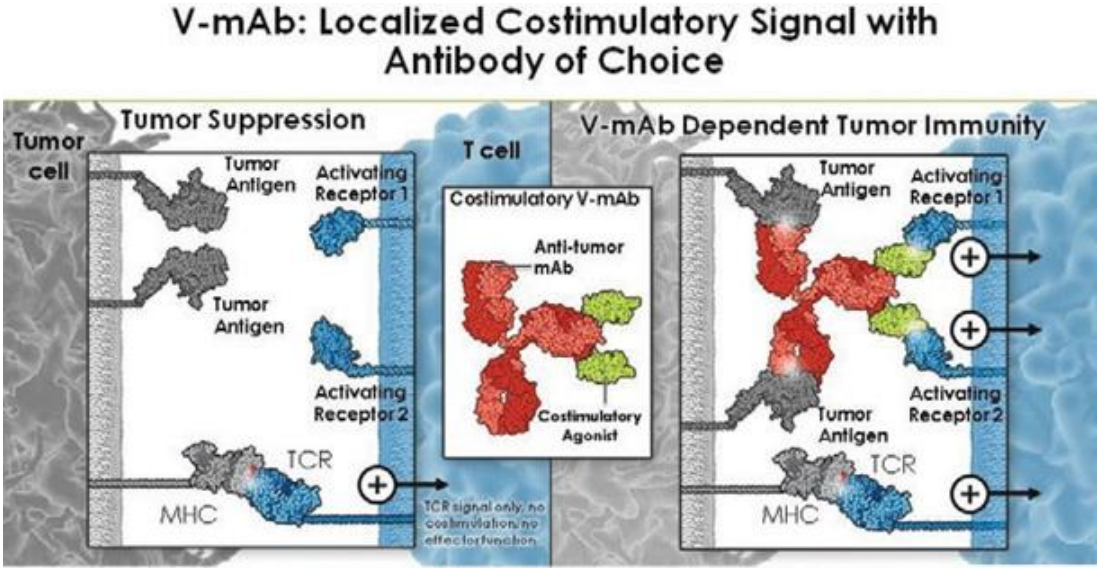


Figure 6

Our V-mAb technology potentially allows targeting a vIgD into the tumor microenvironment with a monoclonal antibody. A “V-mAb” is a vIgD joined with a monoclonal antibody recognizing a validated target (as depicted in Figure 6). Our V-mAbs use the targeting antibody to localize the vIgD to the TME or target tissue to potentially deliver specific, locally-active immuno-modulation.

Tumors thrive in environments of immune suppression. Immune cells have often been recruited to the TME, but are not responding correctly. In many cases, the T cells are recognizing antigen in the form of MHC peptide, but this signal is not supported by required costimulatory activity. In these cases, T cells could benefit from tumor or APC expression of costimulatory ligands such as CD80, CD86, or ICOSL. This strategy will potentially invigorate tumor immune responses in a tumor-specific context, which could potentially be safer than activating T cells with systemic costimulatory agonists.

From a manufacturing standpoint, V-mAbs may potentially have advantages compared to antibody-drug conjugates or ADCs. ADCs typically join a targeting monoclonal antibody with a cytotoxic drug. Our V-mAbs are potentially different from the complex four-step manufacturing process (mAb, linker, drug, and conjugation) necessary for ADCs and do not contain toxic chemicals potentially harmful to bystander cells.

TIP Program

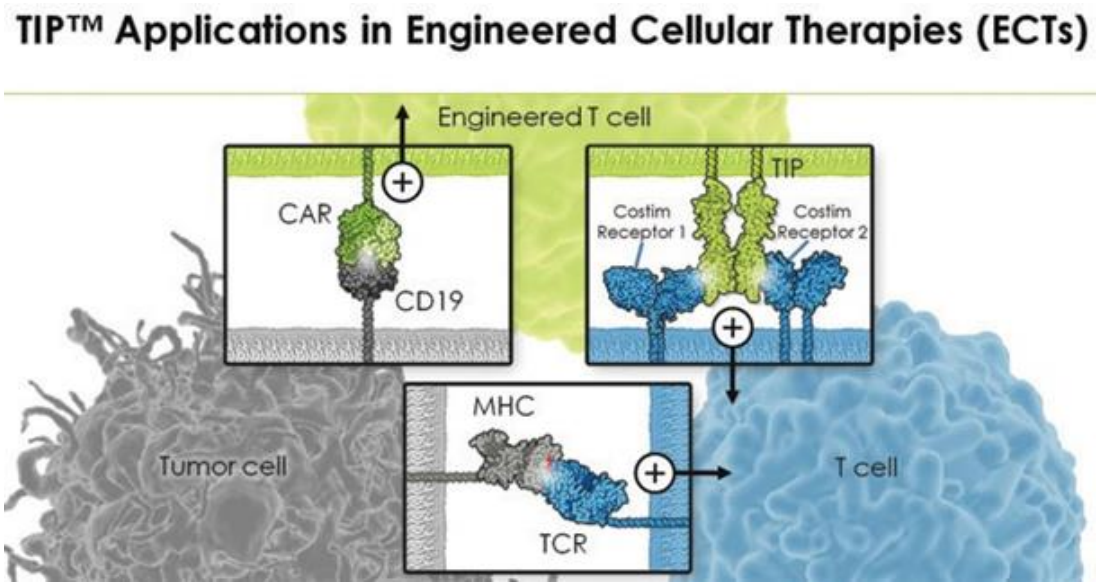


Figure 7

Engineered Cellular Therapies ("ECTs") in the form of CAR-T cells, engineered TCR human T cells, and engineered TILs have captured the attention of the scientific community and patients. The first CAR-T products were approved by the FDA in 2017, ushering in a new era of cancer immunotherapy.

Our TIP program (depicted in Figure 7) was created to potentially improve ECTs. The cytotoxicity, cytokine production, and survival of ECTs can potentially benefit from costimulatory signaling. We created vIgD-based extracellular domains engineered to potentially bind multiple powerful activating receptors on the surface of the T cell, which we call "TIPs". By expressing costimulatory TIPs on CAR-Ts or TCR-engineered T cells, a TIP-enabled product could potentially increase the activity of infused CAR-T/ TCR cells and endogenous T cells present in the tumor environment—potentially causing enhanced and/or more persistent responses to tumors via enhanced costimulatory (activating) signaling.

In October of 2015, Kite and Alpine entered into a research and license agreement pursuant to which we granted Kite an exclusive license to two of our TIP programs, which Kite plans to further engineer into CAR and TCR product candidates. This agreement was extended in October 2017.

SIP Program

Our scientific platform is not restricted to transmembrane proteins expressed on the surface of engineered cell therapies in the TIP format. Infused CAR-T or modified TCR T cells—or even oncolytic viruses—can also be potentially modified to express vIgD-based SIPs.

Potential applications include secretion of SIPs into the extracellular space to antagonize inhibitory receptor activity, which often restricts T cell responses in the tumor environment. Cellular therapies can be engineered to express therapeutic molecules in the tumor environment, such as secreted cytokines or modulators of both inhibitory and activating receptors. The potential result could be ECTs or oncolytic viruses capable of carrying their own localized signals to modify the immune synapse with no need for combination use with expensive checkpoint monoclonal antibodies.

We believe SIPs are a promising approach to antagonize inhibitory receptors because of a SIP's small size as well as the demonstrated ability of T cells to express SIPs compared to monoclonal antibodies or antibody fragments.

Collaboration with Kite Pharma, a Gilead Company

In October 2015, we entered into an exclusive, worldwide license and research agreement with Kite to research, develop, and commercialize autologous ECTs incorporating two programs from our TIP technology. The research term of this agreement was extended in October 2017.

Overview

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

Pursuant to the terms of the license and research agreement, we are responsible for conducting a research plan to deliver TIPs to two specified IgSF targets. Kite is responsible for integrating the TIPs into their ECT constructs. Kite is also responsible for performing *in vitro* and *in vivo* studies of resulting TIP/ECT therapeutics, manufacturing, and clinical trials.

Financial Terms

Under the terms of the agreement, Kite paid us a $5.0 million upfront payment plus $0.5 million in additional payments to support our research. These amounts became non-refundable upon completion of a milestone in March 2016. We are eligible to receive an additional $0.5 million research support payment payable by Kite in two tranches. In addition, we remain eligible to receive up to $530.0 million in total milestone payments based upon the successful completion of pre-specified research, clinical and regulatory milestones relating to both program TIPs. At Kite's option, a portion of the milestone payments may be paid in shares of Kite's common stock. We will also be eligible to receive a low, single-digit percentage royalty for sales on a licensed-product-by-licensed-product and country-by-country basis, until the later of (1) the date on which the licensed product is no longer covered by certain intellectual property rights, and (2) the expiration of a defined term beginning on the first commercial sale of the licensed product. We also granted to Kite an exclusive right of first negotiation to negotiate an exclusive, worldwide, sublicensable, royalty-bearing license, to practice and exploit any pharmaceutical or biologic product containing certain allogeneic T cells developed for use as a therapy for cancer, which we refer to as the Allogeneic Products. In addition, Kite has a one-time right of first refusal prior to our accepting any offer to license such Allogeneic Products on terms substantially similar to terms offered by Kite.

Kite may terminate the agreement with prior written notice after expiration of the research term. Either party may also terminate the agreement upon certain insolvency events of the other party, or with written notice upon material breach by the other party, if such breach has not been cured within a defined period of receiving such notice. We may terminate the agreement with prior written notice if Kite or Kite's affiliates or sublicensees challenge the validity, enforceability or scope of any Alpine licensed patents.

Exclusivity

Kite has worldwide exclusive use of TIPs engineered to target two IgSF proteins chosen by Kite. The license exclusivity is limited to these targets used as ECTs. We retain the right to develop or outlicense these two target families outside of ECTs as well as the right to develop or license any other IgSF targets for use in ECTs.

Intellectual Property Related to Kite Transaction

Each party will each solely own any inventions, and patents claiming those inventions, generated and invented solely by such party, respectively, subject to the exclusive licenses granted by us to Kite. Each party will jointly own any inventions, and patents claiming those inventions, generated or invented by both parties pursuant to the activities conducted under the license and research agreement, subject to the exclusive licenses granted by us to Kite.

Our Strategy

Our goal is to create modern therapies targeting the immune synapse, using our directed- evolution based scientific platform to treat patients with serious conditions such as cancer and inflammatory/autoimmune diseases. To achieve our goals, we intend to:

Aggressively move our lead inflammation/autoimmune program ALPN-101 to clinical trials for the treatment of autoimmune/inflammatory diseases.

ALPN-101 is an ICOS/CD28 dual antagonist vIgD fused to an effectorless Fc backbone. ALPN-101 is based on the discovery, using our scientific platform, of a single vIgD with increased binding affinity for both ICOS and CD28. Molecules in the ALPN-101 program have demonstrated activity *in vitro* and *in vivo* in multiple models of disease. IND-enabling nonclinical and manufacturing efforts have started and we intend to apply for authorization in the fourth quarter of 2018 to begin clinical trials. We currently plan to study ALPN-101 initially in healthy volunteers. We may subsequently study ALPN-101 in patients with diseases such as GvHD, systemic lupus erythematosus, Sjögren's syndrome, inflammatory myositis (e.g., polymyositis, dermatomyositis), and/or arthritis.

Aggressively move our lead oncology program ALPN-202 to clinical trials.

Molecules in the ALPN-202 program are designed to antagonize PD-L1 and CTLA-4, while also providing tumor-localized CD28 agonism. Molecules in the ALPN-202 program are thus potentially capable of blocking inhibitory signals from PD-L1 and CTLA-4 while providing CD28 costimulation. This is accomplished with a single vIgD fused to an effectorless Fc backbone. The ALPN-202 program is based on the discovery, using directed evolution and our scientific platform, of a single domain capable of interacting with PD-L1, CD28, and CTLA-4. Molecules in the ALPN-202 program have demonstrated *in vivo* activity in a mouse model of PD-L1 positive tumors. We intend to file an IND in 2019 to begin clinical trials.

Maximize the value of our pipeline and platform via partnering activities.

We believe our scientific platform is highly productive, with affinity maturation campaigns often resulting in hundreds of potential hits producing dozens of vIgDs with potentially desirable biologic activity. Our discovery efforts to date have resulted in vIgDs with potential uses in cancer, autoimmune/inflammatory, and infectious disease. We believe this provides significant opportunity for partnering discussions. Our first such collaboration, with Kite Pharma, involved two targets for use in ECTs and provided us $5.5 million in cash plus $530.0 million in potential developmental, clinical, and regulatory milestone payments. While difficult to predict the timing of such partnerships or whether we will be successful in our efforts to enter into further collaborations, we are continually in discussions with multiple potential partners ranging from small biotechnology firms to large pharmaceutical companies.

Product Pipeline

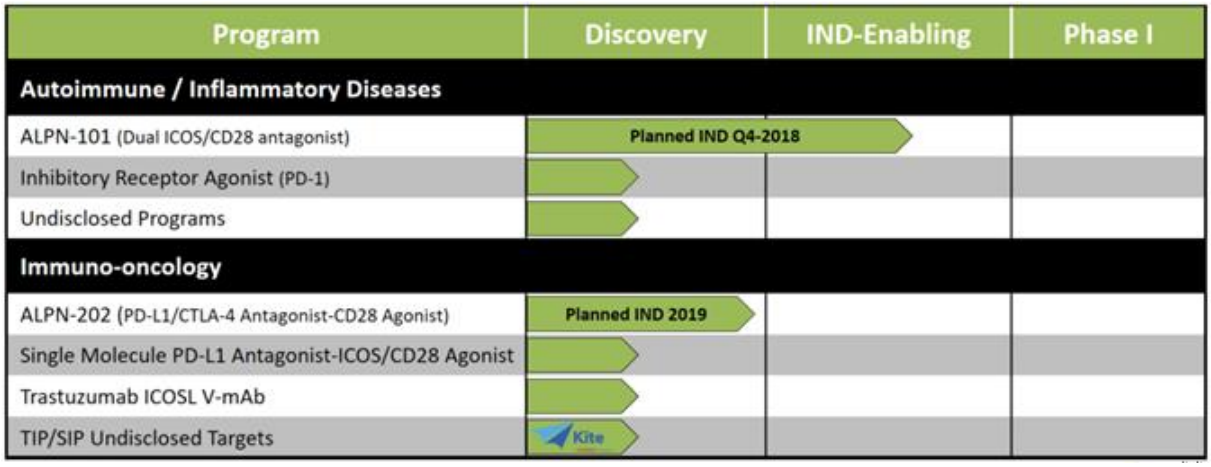


Figure 8

Lead inflammation/autoimmune program: ALPN-101, a Dual ICOS/CD28 vIgD-Fc Antagonist

Our lead autoimmune/inflammation program is comprised of a novel single domain vIgD binding both ICOS and CD28 at higher affinity than wild-type molecules. This vIgD is fused to an effectorless Fc backbone and is intended for the potential treatment of certain inflammatory and autoimmune conditions.

Inducible T cell Costimulator ("ICOS") is part of the CD28 costimulatory family of molecules, including PD-1, CD28, and CTLA-4. ICOS is related to CD28, but, in contrast, is poorly expressed in naïve T cells, and rapidly induced upon activation.[2] It appears to be a dominant costimulatory pathway in at least some effector or pathogenic T cells, particularly in the absence of CD28.[3] Elevated levels of ICOS-expressing T cells have been described in an increasing number of inflammatory diseases, correlating with disease activity.[4,5] Inhibition of ICOS is effective in several preclinical inflammatory disease models. The ICOS pathway may therefore represent a major costimulatory pathway, nonredundant with CD28 and highly relevant to inflammatory diseases.

Cluster of Differentiation 28 ("CD28") is the dominant costimulatory pathway in naïve, antigen-inexperienced T cells, and required for their activation.[6] However, optimal activation of activated and/or effector T cells often occurs independently of CD28.[7] CD28 expression becomes progressively reduced during activation in at least some T cell populations, and CD28-negative T cells have been observed in a growing number of autoimmune diseases, often correlated with disease activity.[8] Therapeutic agents directed against the CD28 pathway alone, such as abatacept, have proven only partially effective or ineffective in some inflammatory diseases,[9] and/or only induce only partial disease improvement in their approved indications.[10] Therefore, an additional, non-CD28, costimulatory pathway(s) likely participates in activated, effector T cells, and may be particularly relevant to inflammatory disease pathogenesis. The known ligands for CD28 are CD80 and CD86. CD28 functions akin to a rheostat—the more CD28 signaling occurs, the faster and stronger the subsequent immune response.

Few studies have examined the effect of therapeutic blockade of ICOS in humans, but early clinical trial findings with the anti-ICOSL mAb AMG-557[11] suggest inhibition of the ICOS pathway alone may also be insufficient to achieve complete efficacy in many inflammatory conditions.

ALPN-101 is designed to inhibit both the CD28 and ICOS pathways to potentially dampen an overactive immune response. Since it addresses potential deficiencies of single pathway blockade, we hypothesize it to be capable of delivering deeper clinical responses by blockading two key T cell costimulatory pathways with a single therapeutic. Using our scientific platform, we have potentially created a powerful dual ICOS/CD28antagonist with significantly increased binding affinity for both ICOS and CD28 and capable of modulating both targets with a single domain.

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2 Wikenheiser & Stumhofer, *Frontiers in Immunology*, v7 n304. August 2016
3 e.g. Wang *et al*. *Journal of Immunology*, v172 n10. May 2004, pp 5917-5923
4 e.g. Choi, *et al*. *Arthritis and Rheumatology*, v67 n4. March 2015 pp 988-999
5 e.g. Fonseca, *et al*. *Arthritis and Rheumatology*. (In press 10.1002/art.40424)
6 McKnight, *et al*. *Journal of Immunology*, v152 n11. June 1994, pp 5220-5225
7 Schweitzer & Sharpe, *Journal of Immunology*, v161 n6. September 1998, pp 2762-2771
8 Maly & Schirmer, *Journal of Immunology Research*, n348746. March 2015
9 e.g. Furie, *et al*, *Arthritis & Rheumatology*, v66 n2. January 2014, pp 379-389
10 e.g. Maxwell & Singh, *Cochrane Database of Systematic Reviews*, v2009 n4. October 2009
11 Cheng, *et al*. *Annals of the Rheumatic Diseases*, v76 n2. 2017 p. 151

Figure 9 is a graphical representation of ALPN-101 and the theorized mechanism of action in humans.

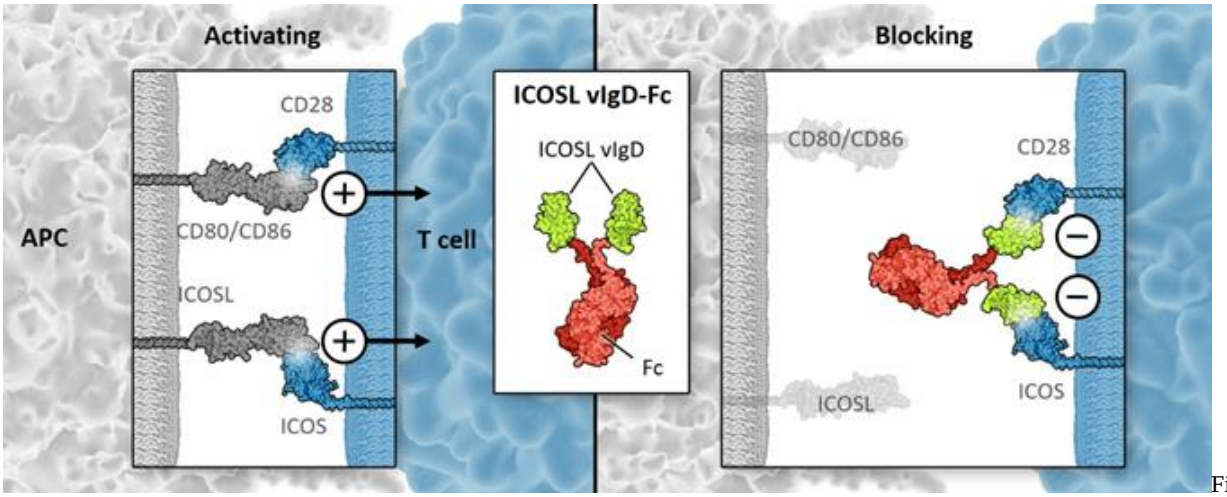

Figure 9

The left side of Figure 9 represents how the interaction typically works to activate T cells when they connect with antigen-presenting cells ("APCs"). CD80/CD86 binds to CD28, and ICOSL binds to ICOS. The resulting costimulatory signal boosts T cell activity (press on the gas). In the case of autoimmune disease and inflammation, this is unwanted activity.

The center of Figure 9 depicts two single ICOSL vIgDs engineered with our scientific platform, each capable of binding CD28 and ICOS. These ICOSL vIgDs are fused to an effectorless Fc.

The right side of Figure 9 shows the goal of ALPN-101—specifically, to block the ability of CD80/CD86 and ICOSL to bind their respective receptors. Put more simply, ALPN-101 seeks to block activating signals (release the gas pedal). When these powerful CD28 and ICOS costimulatory signals are blocked, we believe unwanted immune system activity may be reduced to potentially help patients with inflammatory conditions. The versatility of this therapeutic will potentially allow us to affect a number of different autoimmune/inflammatory diseases and different sets of refractory patient populations.

Notably, ALPN-101 is not a bispecific antibody construct. A traditional bispecific would be constructed of one domain binding ICOS and one domain binding CD28. Instead, ALPN-101 makes use of a novel single domain engineered by our scientists using our proprietary scientific platform.

We have performed a number of pre-clinical experiments demonstrating molecules in the ALPN-101 program are active in both *in vitro* (lab bench) and *in vivo* (animal) models.

Novel Biology

The dual ICOS/CD28 antagonist vIgD at the core of the ALPN-101 program represents potentially novel biology. The mixed-lymphocyte reaction ("MLR") assay used in this test is an *in vitro* assay using real human immune system cells. The MLR assay helps gauge the relative immune activity of our early discovery candidates. The data in Figure 10 below show

ALPN-101 is a much better inhibitor of T cell activity, as measured by interferon gamma (IFN-γ) than either belatacept or abatacept, two drugs approved for autoimmune/inflammatory indications.

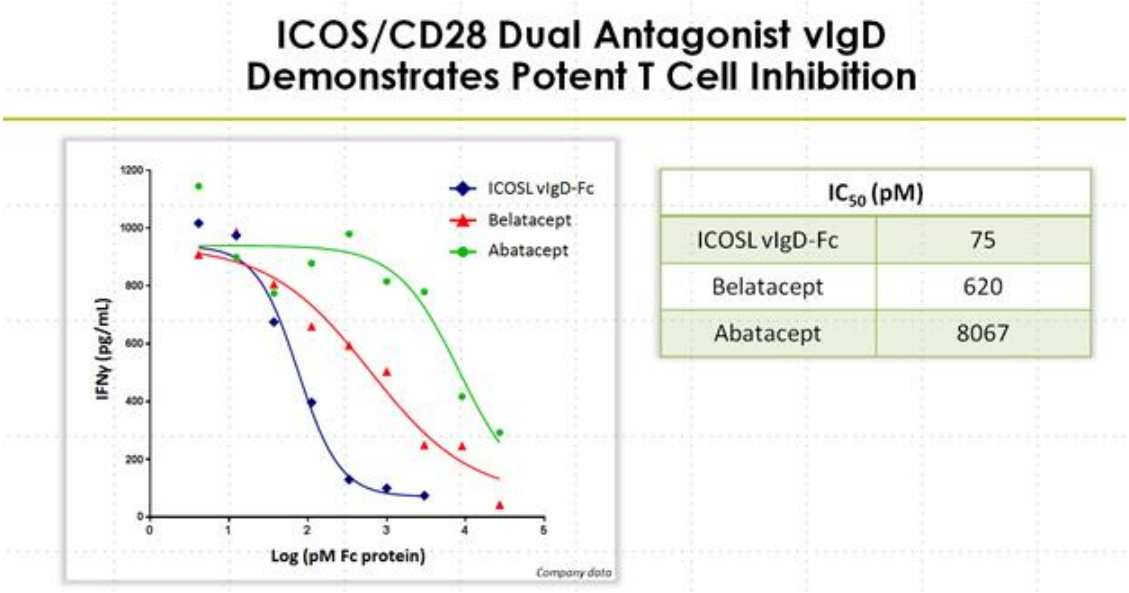

Figure 10

Superior Activity in Human Xenograft GvHD Model

Molecules in the ALPN-101 program were studied in an *in vivo* mouse model of Graft versus Host Disease ("GvHD"), a damaging and even potentially fatal inflammatory disease most often brought about during stem cell and/or bone marrow transplant treatments for cancer or other serious diseases. The results represented in Figure 11 show an ALPN-101 program molecule had superior survival (right panel) and a better Disease Activity Index (left panel). Belatacept, an FDA-approved drug for prevention of renal allograft rejection (a type of inflammation-related rejection process analogous to GvHD) is used as a comparison.

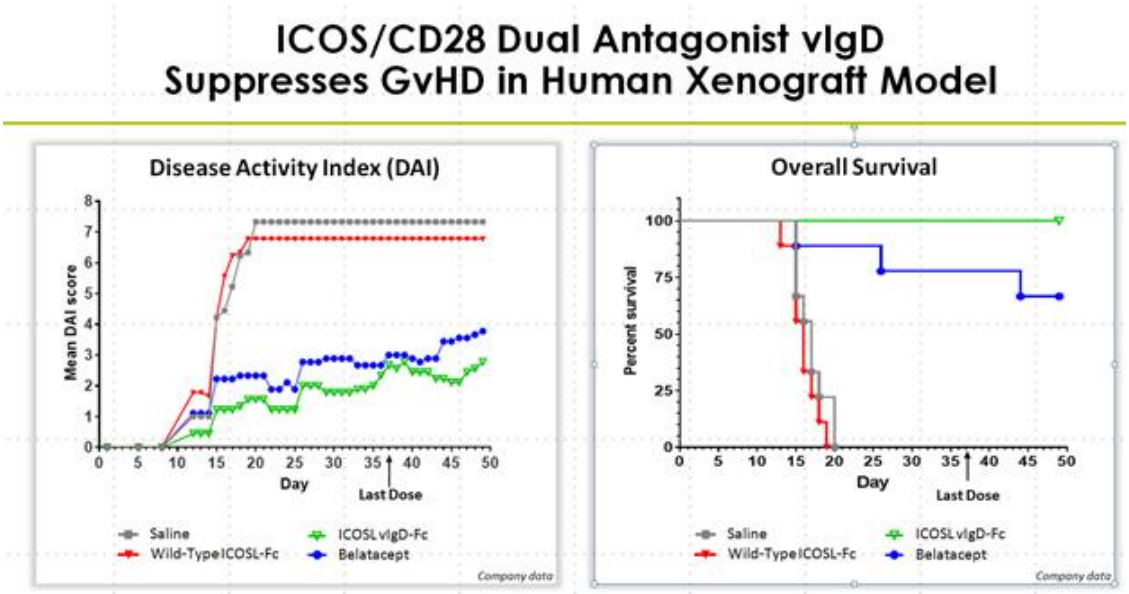

Figure 11

Arthritis Model

Figure 12 shows data from an *in vivo* collagen-induced arthritis model. This model is designed to test a drug's ability to reduce the kinds of inflammatory signals associated with rheumatoid arthritis and other types of inflammatory arthritis conditions. In this experiment, an early molecule in the ALPN-101 program was superior in suppressing arthritic inflammation to abatacept, a drug approved by the FDA to treat rheumatoid and psoriatic arthritis.

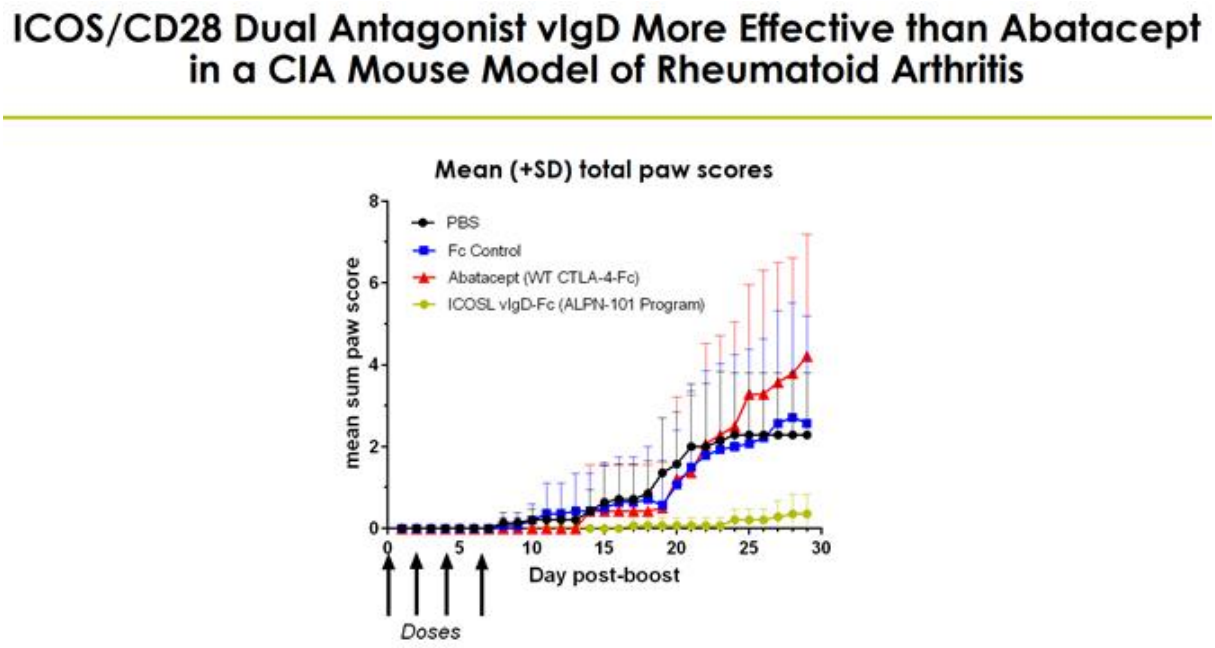

Figure 12

Summary of ALPN-101 Program Preclinical Data

Our scientists have demonstrated in preclinical studies molecules in the ALPN-101 program:

- potently inhibit T cell activity;
- improve the disease activity index and extend survival in an *in vivo* animal GvHD model with comparable activity to belatacept, an FDA-approved drug for immunosuppression in renal transplantation with data in GvHD; and
- reduce disease severity and delays onset time relative to control in a pilot *in vivo* arthritis model with activity superior to abatacept, an FDA-approved drug for rheumatoid and psoriatic arthritis.

ALPN-101 Clinical Plans

Our goal is to file for regulatory authorization for our first ALPN-101 clinical trial in the fourth quarter of 2018. While subject to change, we expect that the initial clinical study will involve cohorts of healthy volunteers who will receive single or multiple ascending doses of ALPN-101 to ascertain its safety, pharmacokinetics, and pharmacodynamics (the biological effects of ALPN-101, as measured in the blood and/or other tissues)

ALPN-202 Program in Oncology

The ALPN-202 program is our lead program for immuno-oncology. Our scientists used wild-type CD80 as the basis for a directed evolution campaign using our proprietary scientific platform. They were able to create a number of interesting vIgDs, including a series capable of blocking PD-1 inhibition and delivering costimulation via CD28. Some vIgDs from this campaign also have significant binding to CTLA-4, another inhibitory checkpoint IgSF.

Programmed cell death protein ligand 1 (“PD-L1”) and its counterstructure, PD-1, are responsible for suppressing immune system responses. Cytotoxic T-lymphocyte Associated protein 4 (“CTLA-4”) also suppresses immune system responses. Both are IgSFs commonly referred to as checkpoint proteins since they act as inhibitory checks against immune system activation, pressing the brakes on an immune reaction. As noted above, CD28 provides a costimulatory signal necessary for T cell activation and survival. It is believed to be the most potent T cell costimulatory receptor of the immune system.

It has long been recognized CD28 is required for T cell activation and CD28 is the most important of the costimulatory molecules.[12] The tumor microenvironment often features exhausted T cells suppressed via PD-1/PD-L1 engagement as seen on the left of Figure 13 below. The development of anti PD-1/L1 mAbs have helped relieve one aspect of the exhausted phenotype, but less than 30% of patients typically respond – likely attributable to the minority of patients who do have sufficient CD28 costimulation as depicted in the center panel of Figure 13. More recent research has, in fact, shown CD28 costimulation is required for anti PD-1/L1 efficacy, absent which tumors do not respond due to inadequate costimulation as seen in the third panel of Figure 13.[13] Therefore, there may be a need for a therapeutic providing both checkpoint antagonism and CD28 costimulation.

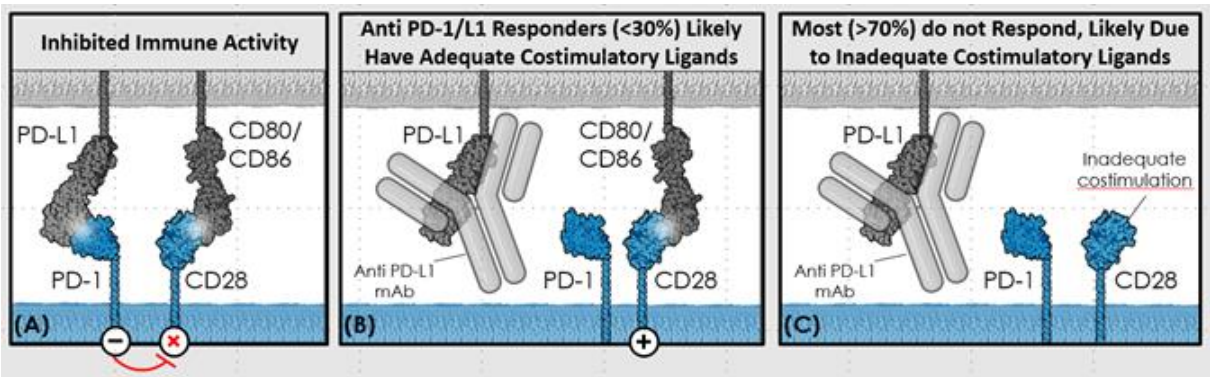

Figure 13

The goal of the ALPN-202 program is to create a therapeutic capable of blocking checkpoint inhibitor activity to take the brakes off the immune system while providing for CD28 costimulation to step on the gas and increase immune system response. Among the potential therapeutic molecules in the ALPN-202 program are those we believe have three modes of activity:

- antagonize PD-L1 to inhibit immune responses;
- agonize CD28 to increase immune response, but only in the presence of PD-L1—a potential mechanism of action we call PD-L1 “dependent” activity; and
- antagonize CTLA-4 to decrease CTLA-4’s ability to inhibit immune response.

We believe we have one or more therapeutic candidates in the ALPN-202 program capable of this triple-action mechanism. This has been accomplished with a single vIgD fused to an effectorless Fc backbone. The fact we have engineered a single vIgD to accomplish this, instead of relying on multiple IgSF domains fused together, represents a potentially important scientific advance and emphasizes the potential power of our scientific platform to create novel therapeutics. We are studying molecules in the ALPN-202 program using *in vivo* models to better understand their activity against tumors.

We will present additional data on the ALPN-202 program at scientific conferences over the coming year.

[12] Krummel & Allison, *Journal of Experimental Medicine*, v182 n2. August 1995, pp 459-65
[13] Kamphorst *et al*, *Science*, v355 n6332. March 2017, pp 1423-1427

ALPN-202 Program Clinical Plans

Our goal is to file for regulatory approval for our first ALPN-202 clinical trials in 2019. We have not yet determined which cancer indication or indications we will investigate first.

Active Discovery Programs

We have a number of active discovery programs under way. In addition to active target research programs listed in Figure 14 below, we are working on a number of undisclosed IgSF targets using our proprietary scientific platform.

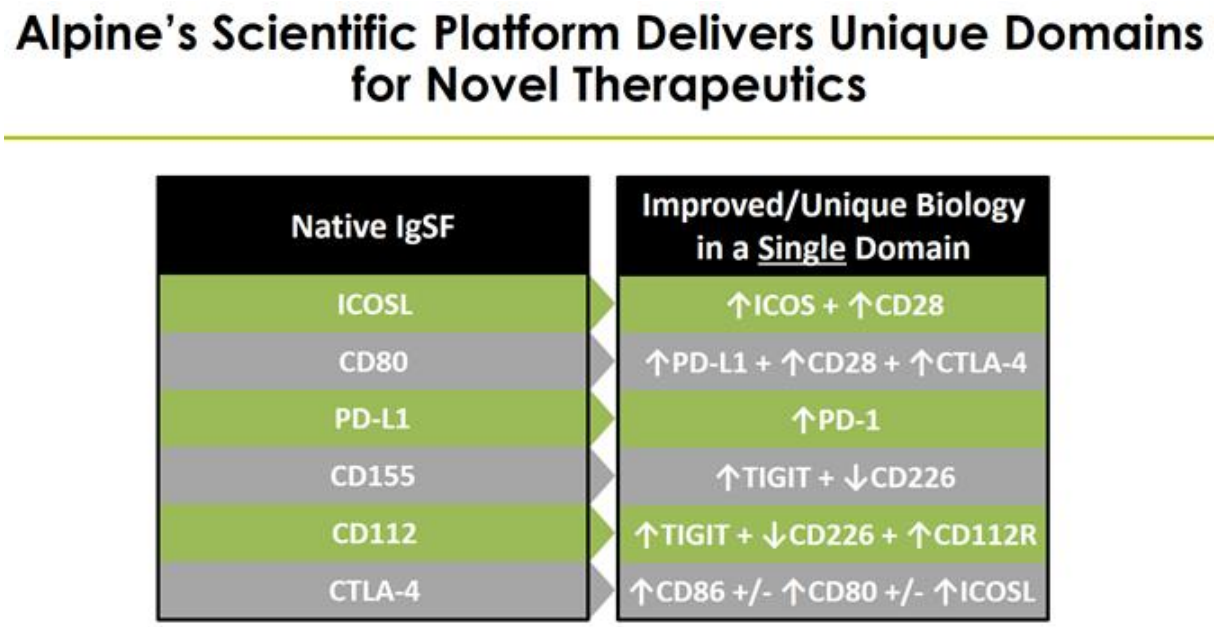

Figure 14

In addition to ongoing target discovery work, we are pursuing preclinical development work on a number of undisclosed therapeutic programs plus the following three discovery-stage programs.

Inhibitory Receptor Agonist (IRA) Program

A subset of IgSFs includes immune inhibitory or "checkpoint" receptors, such as PD-1, CTLA-4, TIGIT, LAG-3, and BTLA. These checkpoint receptors reduce inflammation in several proposed ways, such as competing with activating ligands and/or initiating negative signaling within cells—essentially putting the brakes on the immune system. They are thought to play critical roles in inflammation since genetic flaws affecting their activity have been associated with many autoimmune and inflammatory conditions. Additionally, therapeutic interventions reducing or eliminating their activity result in autoimmunity and/or inflammation in preclinical models.

Agonizing one or more of these checkpoint receptors, therefore, may be particularly effective in the treatment of multiple autoimmune/inflammatory disorders. True inhibitory receptor agonists, however, appear to have been generally difficult to generate reliably in drug-like formats.

Traditional approaches to make inhibitory receptor agonists have included monoclonal antibodies mAb[14] or ligand-Fc fusion biologics[15], but to date, no such agonists have been approved for clinical use.

[14] Dixon, et. al. *Journal of Immunology* v200 n6, March 2018. *In Press*
[15] Carter, et al. *European Journal of Immunology* v32 n3 February 2002, pp 634-643

Our proprietary scientific platform may provide a particularly unique and advantageous means to achieve inhibitory receptor agonism, since it is based upon potently functional IgSF domains highly similar to naturally evolved checkpoint ligands. This potentially allows greater physiologic accessibility to the immune synapse and the ability to modulate specific interactions therein. We are investigating the ability of appropriately engineered vIgD inhibitory receptor agonists to target specifically pathogenic inflammatory cells, creating potent yet directed immunosuppressants.

Trastuzumab/ICOSL V-mAb Program

As noted above, one potential advantage of vIgDs is they can be formatted in a number of different ways. To demonstrate the ability of vIgDs to be integrated into monoclonal antibodies—what we call V-mAbs—we advanced a development program to fuse a costimulatory ICOSL vIgD targeting ICOS and CD28 with trastuzumab, a monoclonal antibody targeting HER2-neu, which is FDA-approved for treating HER2-positive breast and gastric cancers.

Figure 15 below shows a number of alternate ways to attach vIgDs to trastuzumab. While not all of the formats were equally easy to manufacture, all variations shown were producible in sufficient quantities for *in vitro* testing.

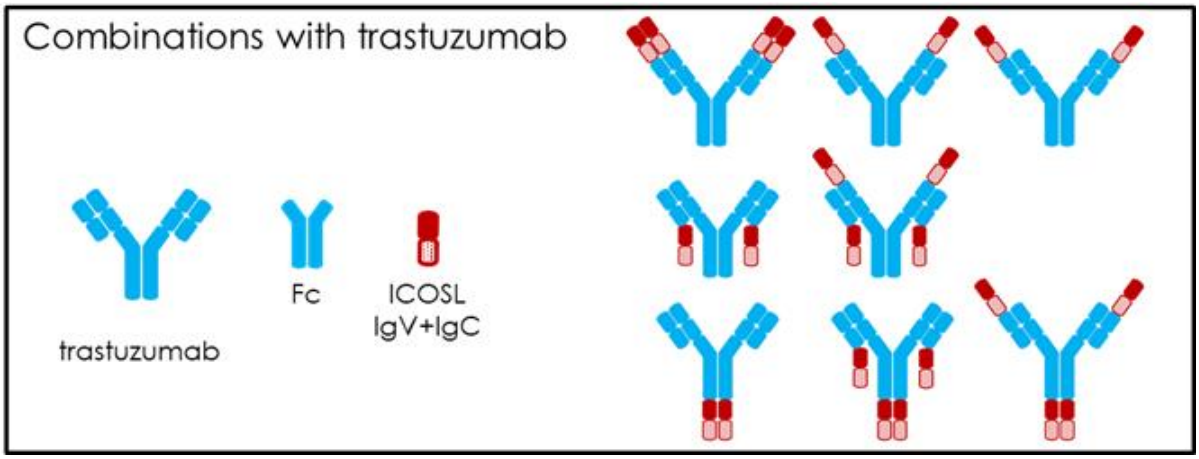

Figure 15

In preclinical *in vitro* investigations, certain of the trastuzumab/ICOSL V-mAbs were able to retain binding to trastuzumab as well as their original binding to ICOS and CD28. Additionally, molecules in the trastuzumab/ICOSL V-mAb program were able to stimulate human T cells in a manner thought to be important for anti-tumor immunity, in the presence of HER2-positive tumor cells.

The goal of the V-mAb program is to use vIgDs to provide tumor-localized costimulation and/or tumor-localized checkpoint antagonism by using the targeting capability of monoclonal antibodies.

Tumor-Localized vIgD Program

As noted above, multiple vIgDs can be fused together on an Fc backbone. There are some IgSF members more likely to be present on the surface of tumors than anywhere else. We undertook a development program on one such IgSF, using it to localize an ICOS/CD28 dual costimulatory signal to tumor cells. Figure 16 is a schematic for how localization could work.

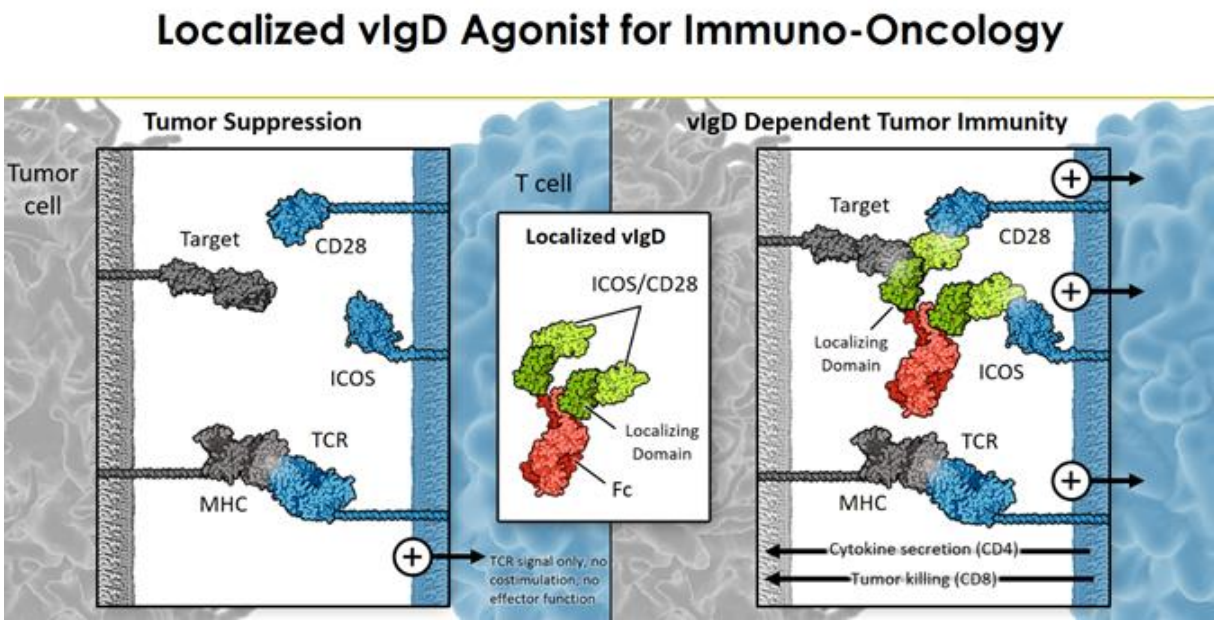

Figure 16

This approach was tested using a pilot *in vivo* mouse model. The CT26 murine colon tumor model was transfected with the target IgSF and implanted in mice. The vIgD-Fc created to target this IgSF was then given to the mice. Figure 17 below is a comparison of anti-tumor activity for the set of mice with the largest tumors prior to dosing. When used in combination with an anti PD-1 monoclonal antibody, complete tumor control was shown. These data are from a preliminary proof-of-concept molecule which, unlike molecules in the ALPN-202 program, work better in combination with anti PD-1 monoclonal antibodies.

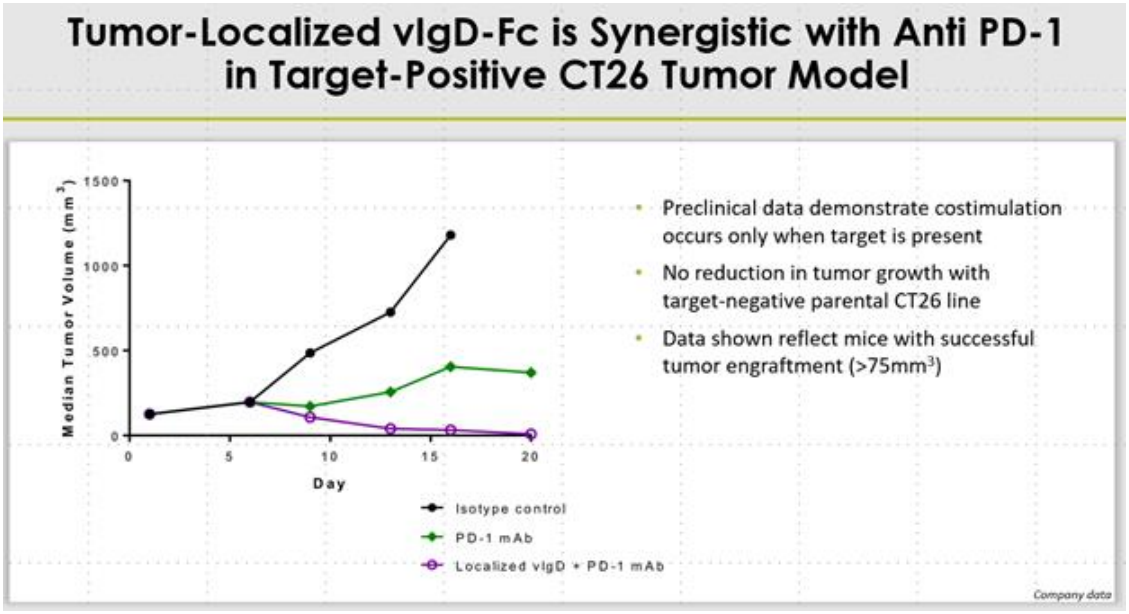

Figure 17

Manufacturing

We have established in-house recombinant protein generation capabilities for producing sufficient protein material to enable our scientific platform process, validate new scientific discoveries, and enable our discovery *in vivo* programs as currently contemplated. Having protein production capabilities in-house allows more rapid progression from yeast libraries to *in vivo* study results.

To date, generating our most promising leads—including our lead program ALPN-101 – has been accomplished through standard protein production and purification methods. As noted above, we believe one advantage of our scientific platform is selection outputs are generally manufacturable. Because the directed evolution process itself requires some level of protein production, second and third generation maturation campaigns usually select for proteins readily expressed with favorable biochemical properties. We produce our vIgDs and vIgD-Fc constructs in mammalian cell lines using both HEK293 and CHO cell expression systems in our in-house protein production processes.

We have not yet manufactured any of our proteins at commercial scale. Abatacept is a wild-type IgSF protein commercially approved for multiple indications with no publicly-reported manufacturing difficulties. Belatacept is an IgSF protein with two mutations, likewise approved in multiple countries. We believe these two examples are potentially similar (in manufacturing terms) to our vIgD-based products.

We have chosen a U.S.-based contract drug substance manufacturer for our initial clinical trial supplies of ALPN-101. We believe this contract manufacturer's particular expertise is in protein analytics and production, and it has the capability to meet rapid timelines encompassing the development of production cell-lines to manufacturing of clinical trial quantities of the biopharmaceutical product.

Competition

We participate in the highly competitive sector of biotechnology and pharmaceuticals and in the subsector of immune modulation. This subsector has undergone tremendous technological advancement over the last decade due to advancements in understanding the role of the immune system across multiple therapeutic areas, including oncology and autoimmune/inflammatory disease. While we believe our novel technology platform, discovery programs, knowledge, experience, and scientific resources offer competitive advantages, we face competition from major pharmaceutical and biotechnology companies, academic institutions, governmental agencies, public and private research institutions, and others.

Any products we successfully develop and commercialize will face competition from currently approved therapies and new therapies potentially available in the future.

The availability of reimbursement from government and other third-party payors will also significantly affect the pricing and competitiveness of our products. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for our products, which could result in our competitors establishing a strong market position before we are able to enter the market.

Many of the companies we compete against may have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals, and marketing approved products. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

Specifically, our competitors include companies developing therapies with the same target(s) as ALPN-101 and ALPN-202 as well as companies building novel platforms to generate multi-specific antibody or non-antibody-based targeting proteins.

ICOSL/CD28 Competitors

The competitors listed below have programs targeting either ICOS or CD28 (or one of their counterstructures). To our knowledge, there are currently no competitors with a single molecule targeting ICOS and CD28 simultaneously.

- an anti-ICOSL/B7RP-1 monoclonal antibody being developed by Amgen, Inc. (may be referred to as AMG557 or MEDI5872);
- an anti-ICOS monoclonal antibody being developed by MedImmune, Inc. (MEDI570);
- an anti-CD28 monoclonal antibody fragment being developed by OSE ImmunoTherapeutics SA and Johnson & Johnson Inc. (FR104);
- a CTLA-4 selective for CD86 fusion protein being developed by Astellas Pharma Inc. (ASP 2408/09);
- a CD28 superagonist monoclonal antibody being developed by TheraMab LLC (TAB08); and
- an anti-BAFF, anti-ICOSL bispecific antibody being developed by Amgen, Inc (AMG/570/MEDI0700).

ALPN-202 program competitors

There are hundreds of clinical trials for immuno-oncology products used as a single agent or in combination. One of the potentially novel attributes of the ALPN-202 program is how it targets multiple IgSFs with a single molecule and how it combines inhibitory receptor antagonism with activating costimulation.

Other attempt to target multiple targets for immune-oncology are listed below. To our knowledge, there are currently no competitors with a single molecule targeting PD-L1, CD28, and CTLA-4.

- a wild-type CD80 Fc being developed by Five Prime Therapeutics, Inc. (FPT155);
- another wild-type CD80 molecule studied by University of Maryland Baltimore County;
- bispecific monoclonal antibodies being developed by Xencor, Inc. including XmAb20717 targeting CTLA-4 and PD-1, XmAb22841 targeting CTLA-4 and LAG-3, and XmAb23104 targeting PD-1 and ICOS;
- bispecific constructs called “DARTs” being developed by Macrogenics Inc., including MGD013 targeting PD-1 and LAG-3 and MGD019 targeting PD-1 and CTLA-4;
- bispecific monoclonal antibodies being developed by Tesoro, Inc., including targeting PD-1 and TIM3 or PD-1 and LAG-3;
- small molecule antagonists being developed by Curis, Inc., including CA-170 targeting PD-L1 and VISTA and CA-327 targeting PD-L1 and TIM-3;

- FS118, a bispecific monoclonal antibody targeting PD-1 and LAG-3 being developed by F-star Biotechnology, Ltd.; and
- various combinations of separate anti PD-1/L1 and anti-CTLA-4 monoclonal antibodies.

Novel Platform Competitors

Platforms potentially competitive with our proprietary scientific platform include:

- Nanobody® (Ablynx NV), being purchased by Sanofi Pharma, Inc. : Platform technology of single-domain, heavy-chain antibody fragments derived from camelidae (e.g., camels and llamas);
- DART® (Macrogenics Inc): Dual-Affinity Re-Targeting and Trident technology platforms bind multiple targets with a single molecule; Anticalin® (Pieris Pharmaceuticals Inc): Engineered proteins derived from natural lipocalins found in blood plasma; Targeted Immunomodulation™ (Compass Therapeutics LLC): Antibody discovery targeting the tumor-immune synapse;
- Harpoon Therapeutics Inc: Trispecific antigen-binding proteins;
- various bispecific antibody platforms (e.g., Amgen Inc (BiTE®—approved), Roche AG (RG7828), Zymeworks Inc (Azymetric™), Xencor Inc (XmAb Bispecific), Compass Therapeutics (StitchMabs™));
- Five Prime Therapeutics®: Proprietary protein library and rapid protein production and testing platform;
- Regeneron®: VEGF Trap and VelociSuite® antibody technology platforms; and
- Shattuck Labs®: Agonist Redirected Antibody platform claimed to bind tumor-necrosis factor (“TNF”) and checkpoint targets.

Intellectual Property

Our scientific platform and substantially all our intellectual property has been developed internally. As of December 31, 2017, our patent portfolio consists of over 13 pending patent applications. Our initial patent application is directed to our scientific platform itself. Our second patent application is directed to the TIP program. We filed subsequent patent applications directed to our SIP program as well as to various target domains under development. To date, some of these applications have published but none have yet matured into granted patents. Each of these patent applications is solely owned by us. As we continue the development of our scientific platform and target vIgDs, we intend to continue pursuing intellectual property protection for these technologies.

We have in-licensed some intellectual property and trade secret materials on a non-exclusive basis. To date, such non-exclusive in-licenses are solely related to commercially-available cell lines involved in the manufacture of our vIgD programs. To date, no other intellectual property related to our scientific platform has been in-licensed. We have out-licensed two programs under our TIP technology to Kite Pharma Inc. (a Gilead Company) on an exclusive basis. No other out-licenses have been made.

Although we do not believe our technology infringes any intellectual property rights owned by third parties, we are aware of one or more patents and patent applications that may relate to our technology. Third parties may assert claims against us alleging infringement of their intellectual property rights regardless of whether their allegations have merit. Allegations of infringement could harm our reputation, may result in the expenditure of significant resources to defend and resolve such allegations, and could require us to pay monetary damages if we are found to have infringed any third party intellectual property rights.

Government Regulation

The FDA and comparable regulatory authorities in state and local jurisdictions and in other countries impose substantial and burdensome requirements on the clinical development, manufacture, marketing, and distribution of therapeutic candidates. These agencies and other federal, state, and local entities regulate research and development activities and the testing, manufacture, quality control, safety, effectiveness, labeling, storage, record keeping, approval, advertising and promotion, and export and import of therapeutic candidates and products.

In the U.S., the FDA regulates drugs, medical devices, and biologic products under the Federal Food, Drug, and Cosmetic Act, or FFDCA, its implementing regulations and other laws, including, in the case of biologics, the Public Health Service Act. Our potential therapeutic candidates and products will be subject to regulation by the FDA as biologics. Biologics require the submission of a Biologics License Application ("BLA") and approval by the FDA before being marketed in the U.S. None of our therapeutic candidates have been approved by the FDA for marketing in the U.S., and we currently have no BLAs pending. If we fail to comply with applicable FDA or other requirements at any time during the product development process, clinical testing, the approval process, or after approval, we may become subject to administrative or judicial sanctions. These sanctions could include the FDA's refusal to approve pending applications, license suspension or revocation, withdrawal of an approval, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties, or criminal prosecution. Any FDA enforcement action could have a material adverse effect on us. The process required by the FDA before biologic therapeutic candidates may be marketed in the U.S. generally involves the following:

- completion of extensive preclinical laboratory tests, preclinical animal studies, and formulation studies all performed in accordance with the FDA's current good laboratory practice ("cGLP"), regulations;
- submission to the FDA of an IND application which must become effective before human clinical trials in the U.S. may begin;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the drug candidate for each proposed indication;
- submission to the FDA of a BLA;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with cGMP regulations; and
- FDA review and approval of the BLA prior to any commercial marketing, sale, or shipment of the therapeutic product.

The testing and approval process requires substantial time, effort, and financial resources, and we cannot be certain any approvals for our therapeutic candidates will be granted on a timely basis, if at all.

Once a therapeutic candidate is identified for development, it enters the preclinical testing stage. Preclinical studies include laboratory evaluations of protein chemistry, formulation, and stability, as well as studies to evaluate toxicity in animals. The results of the preclinical studies, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application. Currently, the IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day period, raises concerns or questions about the conduct of the clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. Submission of an IND may result in the FDA not allowing the clinical trials to commence or not allowing the clinical trials to commence on the terms originally specified in the IND. A separate submission to an existing IND must also be made for each successive clinical trial conducted during drug development, and the FDA must grant permission, either explicitly or implicitly by not objecting, before each clinical trial can begin. We have not yet commenced clinical trials for any of our current therapeutic candidates.

Clinical trials involve the administration of the therapeutic candidate to human subjects under the supervision of qualified investigators. Clinical trials are conducted under protocols detailing, among other things, the objectives of the clinical trial, the parameters to be used in monitoring safety, and the effectiveness criteria to be used. Each protocol must be submitted to the FDA as part of the IND. For each medical center proposing to conduct a clinical trial , an institutional review board ("IRB") must also review and approve a plan for any clinical trial before it can begin at that center and the IRB must monitor the clinical trial until it is completed. The FDA, an IRB, or the sponsor may suspend or discontinue a clinical trial at any time on various grounds, including a finding the subjects are being exposed to an unacceptable health risk. Clinical testing also must satisfy extensive Good Clinical Practice requirements, including the requirements for informed consent.

All clinical research performed in the U.S. in support of a BLA must be authorized in advance by the FDA under the IND regulations and procedures described above. However, a sponsor who wishes to conduct a clinical trial outside the U.S. may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. If a foreign clinical trial is not conducted under an IND, the sponsor may submit data from the clinical trial to the FDA in support of a BLA so long as the clinical trial is conducted in compliance with an international guideline for the ethical conduct of clinical research known as the Declaration of Helsinki and/or the laws and regulations of the country or countries in which the clinical trial is performed, whichever provides the greater protection to the participants in the clinical trial.

Clinical Trials

For purposes of BLA submission and approval, clinical trials are typically conducted in three sequential phases, which may overlap or be combined.

- Phase I clinical trials are initially conducted in a limited population of subjects to test the therapeutic candidate for safety, dose tolerance, absorption, metabolism, distribution, and excretion in healthy humans or, on occasion, in patients with severe problems or life-threatening diseases to gain an early indication of its effectiveness.
- Phase II clinical trials are generally conducted in a limited patient population to evaluate preliminarily the efficacy of the therapeutic candidate for specific targeted indications in patients with the disease or condition under study; evaluate dosage tolerance and appropriate dosage; and identify possible adverse effects and safety risks.
- Phase III clinical trials are commonly definitive efficacy studies of the experimental medication. Phase III trials are typically conducted when Phase II clinical trials demonstrate a dose range of the therapeutic candidate is effective and has an acceptable safety profile. Phase III clinical trials are generally undertaken with large numbers of patients, such as groups of several hundred to several thousand, to provide substantial evidence of clinical efficacy and to further test for safety in an expanded patient population at multiple, geographically-dispersed clinical trial sites.

In some cases, the FDA may condition approval of a BLA on the sponsor's agreement to conduct additional post-approval clinical trials to further assess the biologic's safety and effectiveness after BLA approval. Such post-approval clinical trials are typically referred to as Phase IV clinical trials.

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

Biologics License Applications

The results of preclinical studies and of the clinical trials, together with other detailed information, including extensive manufacturing information and information on the chemistry, pharmacology, clinical pharmacology, and the clinical effects of the biologic, are submitted to the FDA in the form of a BLA requesting approval to market the biologic for one or more specified indications. The FDA reviews a BLA to determine, among other things, whether a biologic is safe, pure, and potent and whether the facility in which the biological product is manufactured, processed, packed, or held meets standards designed to assure the biological product continues to be safe, pure, and potent.

Once a BLA has been accepted for filing, by law the FDA will review the application and respond to the applicant but the review process may be significantly delayed by FDA's requests for additional information or clarification. Under the Prescription Drug User Fee Act, the FDA evaluates a standard original BLA submission within the first 60 days of its receipt to determine if it is sufficiently complete to conduct a full review, and the FDA has a goal of responding to the submission within ten months of the 60-day filing date, but this timeframe is often extended. The FDA may refer the application to an advisory committee for review, evaluation, and/or recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. The FDA may deny approval of a BLA if the applicable statutory and regulatory criteria are not satisfied, or for any reason, or it may require additional clinical data. Even if such data are submitted, the FDA may ultimately decide the BLA does not satisfy the criteria for approval. Data from clinical trials are not always conclusive and the FDA may interpret data differently than we interpret data. Once the FDA approves a BLA, or supplement thereto, the FDA may withdraw the approval if ongoing regulatory requirements are not met or if safety problems are identified after the biologic reaches the market. Where a withdrawal may not be appropriate, the FDA still may seize existing inventory of such biologic or require a recall of any biologic already on the market. In addition, the FDA may require testing, including Phase IV clinical trials and surveillance programs to monitor the effect of approved biologics which have been commercialized. The FDA has the authority to prevent or limit further marketing of a biologic based on the results of these post-marketing programs.

A sponsor may also seek approval of its therapeutic candidates under programs designed to accelerate FDA review and approval of BLAs. For instance, a sponsor may seek FDA designation of a therapeutic candidate as a "fast track product." Fast track products are those products intended for the treatment of a serious or life- threatening disease or condition and which demonstrate the potential to address unmet medical needs for such diseases or conditions. If fast track designation is obtained, the FDA may initiate review of sections of a BLA before the application is complete. This "rolling review" is available if the applicant provides, and the FDA approves, a schedule for the remaining information. In some cases, a fast track product may be approved on the basis of either a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments, under the FDA's accelerated approval program. Approvals of this kind typically include requirements for appropriate post-approval confirmatory clinical trials to validate the surrogate endpoint or otherwise confirm the effect of the clinical endpoint.

In addition, the Food and Drug Administration Safety and Innovation Act, ("FDASIA") which was enacted and signed into law in 2012, established a new category of drugs referred to as "breakthrough therapies" that may be subject to accelerated approval. A sponsor may seek FDA designation of a drug candidate as a "breakthrough therapy" if the drug is intended, alone or in combination with one or more other drugs, to treat a serious or life- threatening disease or condition and preliminary clinical evidence indicates the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development.

Therapeutic candidates may also be eligible for "priority review," or review within a six-month timeframe from the 60-day filing date, if a sponsor provides sufficient clinical data demonstrating its therapeutic candidate provides a significant improvement compared to marketed products. Even if a therapeutic candidate qualifies for one or more of these programs, the FDA may later decide the therapeutic candidate no longer meets the conditions for qualification or that the period for FDA review or approval will be lengthened. When appropriate, we intend to seek fast track designation and/or accelerated approval for our biologics. We cannot predict whether any of our therapeutic candidates will obtain a fast track and/or accelerated approval designation and, if so, whether such designation will be maintained or rescinded by FDA, or the ultimate impact, if any, of the fast track or the accelerated approval process on the timing or likelihood of FDA approval of any of our proposed biologics.

Biologics may be marketed only for the FDA approved indications and in accordance with the provisions of the approved labeling. Further, if there are any modifications to the biologic, including changes in indications, labeling, or manufacturing processes, equipment, or facilities, the applicant may be required to submit and obtain FDA approval of a new BLA or BLA supplement, which may require us to develop additional data or conduct additional preclinical studies and clinical trials.

Before approving an application, the FDA will inspect the facility or the facilities at which the biologic product is manufactured, and will not approve the product unless cGMP compliance is satisfactory. The FDA may also inspect the sites at which the clinical trials were conducted to assess their compliance, and will not approve the biologic unless compliance with Good Clinical Practice requirements is satisfactory.

The testing and approval processes require substantial time, effort, and financial resources, and each may take several years to complete. The FDA may not grant approval on a timely basis, or at all. Even if we believe a clinical trial has demonstrated safety and efficacy of one of our therapeutic candidates for the treatment of a disease, the results may not be satisfactory to the FDA. Preclinical and clinical data may be interpreted by the FDA in different ways, which could delay, limit, or prevent regulatory approval. We may encounter difficulties or unanticipated costs in our efforts to secure necessary governmental approvals which could delay or preclude us from marketing our therapeutic candidates. The FDA may limit the indications for use or place other conditions on any approvals restricting the commercial application of the products. After approval, certain changes to the approved biologic, such as adding new indications, change in personnel, manufacturing changes, or additional labeling claims, are subject to further FDA review and approval. Depending on the nature of the change proposed, a BLA supplement—which may require additional studies to evaluate the effect of such change on the identity, strength, quality, purity, or potency of the product as they may relate to the safety or effectiveness of the product—must be filed and approved before the change may be implemented. As with new BLAs, the review process for BLA supplements may be delayed by the FDA through requests for additional information or clarification.

We believe any of our therapeutic products approved as a biological product under a BLA might qualify for a 12-year period of exclusivity currently permitted by the Biologics Price Competition and Innovation Act ("BPCIA"). Specifically, the BPCIA established an abbreviated pathway for the approval of biosimilar and interchangeable biological products. 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" based on its similarity to an existing brand product. Under the BPCIA, an application for a biosimilar product cannot be submitted by an applicant until four years after the date the reference product was first licensed and cannot be approved by the FDA until 12 years after the original branded product was first licensed under a BLA. There is a risk the U.S. Congress could amend the BPCIA to significantly shorten this exclusivity period or the FDA will not consider our therapeutic candidates to be reference products for competing products, potentially creating the opportunity for 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 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. The BPCIA is complex and is only beginning to be interpreted and implemented by the FDA and the courts. 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 operating to limit the scope or length of exclusivity afforded by the BPCIA could have a material adverse effect on the future commercial prospects for our biological products. In addition, foreign regulatory authorities may also provide for exclusivity periods for approved biological products or for abbreviated pathways for follow on biological products. For example, biological products in Europe may be eligible for a 10-year period of exclusivity.

Under the Orphan Drug Act, the FDA may grant orphan drug designation to therapeutic candidates intended to treat a rare disease or condition, which is generally a disease or condition affecting fewer than 200,000 individuals in the U.S. or more than 200,000 individuals in the U.S. and for which there is no reasonable expectation the cost of developing and making available in the U.S. a therapeutic candidate for this type of disease or condition will be recovered from sales in the U.S. for that therapeutic candidate. Orphan drug designation must be requested before submitting a marketing application for the therapeutic for that particular rare disease or condition. After the FDA grants orphan drug designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process. The FDA may revoke orphan drug designation, and if it does, it will publicize the drug is no longer designated as an orphan drug. If a therapeutic candidate with orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the therapeutic candidate is entitled to orphan product exclusivity, which means the FDA may not approve any other applications to market the same therapeutic candidate for the same indication, except in very limited circumstances, for seven years. Orphan drug exclusivity, however, could also block the approval of one of our therapeutic candidates for seven years if a competitor obtains approval of the same therapeutic candidate as defined by the FDA or if our therapeutic candidate is determined to be contained within the competitor's therapeutic candidate for the same indication or disease.

Under the Best Pharmaceuticals for Children Act, certain therapeutic candidates may obtain an additional six months of exclusivity if the sponsor submits information requested in writing by the FDA, referred to as a "Written Request," relating to the use of the active moiety of the therapeutic candidate in children. The FDA may not issue a Written Request for studies on unapproved or approved indications where it determines information relating to the use of a therapeutic candidate in a pediatric population, or part of the pediatric population, may not produce health benefits in that population. In addition, the Pediatric Research Equity Act ("PREA") requires a sponsor to conduct pediatric studies for most therapeutic candidates and biologics, for a new active ingredient, new indication, new dosage form, new dosing regimen, or new route of administration. Under PREA, original NDAs, BLAs and supplements thereto must contain a pediatric assessment unless the sponsor has received a deferral or waiver. The required assessment must assess the safety and effectiveness of the therapeutic candidate for the claimed indications in all relevant pediatric subpopulations and support dosing and administration for each pediatric subpopulation for which the therapeutic candidate is safe and effective. The sponsor or the FDA may request a deferral of pediatric studies for some or all of the pediatric subpopulations. A deferral may be granted for several reasons, including a finding the drug or biologic is ready for approval for use in adults before pediatric studies are complete or additional safety or effectiveness data needs to be collected before the pediatric studies begin. The FDA must send a noncompliance letter to any sponsor failing to submit the required assessment, keep a deferral current, or fails to submit a request for approval of a pediatric formulation.

Other Regulatory Requirements

Any biologics manufactured or distributed by us or our collaborators pursuant to FDA approvals would be subject to continuing regulation by the FDA, including recordkeeping requirements and reporting of adverse experiences associated with the product. Manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMPs, which impose certain procedural and documentation requirements upon us and third-party manufacturers. Failure to comply with the statutory and regulatory requirements can

subject a manufacturer to possible legal or regulatory action, such as warning letters, suspension of manufacturing, seizure of product, injunctive action or possible civil penalties. Our company cannot be certain it or its present or future third-party manufacturers or suppliers will be able to comply with the cGMP regulations and other ongoing FDA regulatory requirements. If our company or its present or future third-party manufacturers or suppliers are not able to comply with these requirements, the FDA may halt our clinical trials, require us to recall a drug from distribution, or withdraw approval of the BLA for the therapeutic product.

The FDA closely regulates the post-approval marketing and promotion of biologics, including standards and regulations for direct-to-consumer advertising, off-label promotion, industry-sponsored scientific and educational activities, and promotional activities involving the Internet. A company can make only those claims relating to safety and efficacy approved by the FDA. Failure to comply with these requirements can result in adverse publicity, warning letters, corrective advertising, and potential civil and criminal penalties. Physicians may prescribe legally available biologics for uses not described in the product's labeling and different from those tested by us and approved by the FDA. Such off-label uses are common across medical specialties. Physicians may believe such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, impose stringent restrictions on manufacturers' communications regarding off-label use.

Healthcare Reform

In March 2010, Congress passed the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the "ACA"), a sweeping law intended to broaden access to health insurance, reduce or constrain the growth of health spending, enhance remedies against fraud and abuse, add new transparency requirements for the healthcare and health insurance industries, impose new taxes and fees on the health industry, and impose additional policy reforms. The ACA contains a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement changes, and fraud and abuse, impacting existing government healthcare programs and resulting in the development of new programs, including Medicare payment for performance initiatives, and improvements to the physician quality reporting system and feedback program. The Affordable Care Act also does, among other things, the following:

- Increases pharmaceutical manufacturer rebate liability under the Medicaid Drug Rebate Program due to an increase in the minimum basic Medicaid rebate on most branded prescription drugs, and the application of Medicaid rebate liability to drugs used in risk-based Medicaid managed care plans.
- Expands the 340B Drug Pricing Program to require discounts for "covered outpatient drugs" sold to certain children's hospitals, critical access hospitals, freestanding cancer hospitals, rural referral centers, and sole community hospital.
- Requires pharmaceutical companies to offer discounts on brand-name drugs to patients who fall within the Medicare Part D coverage gap, commonly referred to as the "Donut Hole."
- Requires pharmaceutical companies to pay an annual non-tax-deductible fee to the federal government based on each company's market share of prior year total sales of branded drugs to certain federal healthcare programs, such as Medicare, Medicaid, Department of Veterans Affairs, and Department of Defense.
- Establishes the Independent Payment Advisory Board, which, since 2014, has had authority to recommend certain changes to the Medicare program to reduce expenditures by the program when spending exceeds a certain growth rate and such changes could result in reduced payments for prescription drugs. Under certain circumstances, these recommendations will become law unless Congress enacts legislation achieving the same or greater Medicare cost savings. However, as of early 2018, the President has yet to nominate anyone to serve on the board and there is legislation being proposed to repeal it.
- Establishes the Patient-Centered Outcomes Research Institute to identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research. The research conducted by the Patient-Centered Outcomes Research Institute may affect the market for certain pharmaceutical products.
- Establishes The Center for Medicare and Medicaid Innovation within the Centers for Medicare and Medicaid Services ("CMS") to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending. Funding has been allocated to support the mission of the Center for Medicare and Medicaid Innovation from 2011 to 2019.

From time to time, legislation is drafted, introduced, and passed in Congress that could significantly change the statutory provisions governing the sale, marketing, coverage, and reimbursement of products regulated by the CMS or other government agencies. In addition to new legislation, CMS regulations and policies are often revised or interpreted by the agency in ways significantly affecting our business and our products.

In particular, we expect the Administration and Congress will continue to seek to modify, repeal, or otherwise invalidate all, or certain provisions of, the U.S. healthcare reform legislation. Since taking office, President Trump has continued to support the repeal of all or portions of the ACA. President Trump has also issued an executive order in which he stated it is his Administration's policy to seek the repeal of the ACA and directed executive departments and federal agencies to waive, defer, grant exemptions from, or delay the implementation of the provisions of the ACA to the maximum extent permitted by law. There is still uncertainty with respect to the impact President Trump's Administration and Congress may have, if any, and any changes will likely take time to unfold. Such reforms could have an adverse effect on anticipated revenues from therapeutic candidates we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop therapeutic candidates. However, we cannot predict the ultimate content, timing, or effect of any healthcare reform legislation or the impact of potential legislation on our company.

Furthermore, political, economic, and regulatory influences are subjecting the health care industry in the U.S. to fundamental change. Initiatives to reduce the federal budget and debt and to reform health care coverage are increasing cost-containment efforts. We anticipate federal agencies, Congress, state legislatures, and the private sector will continue to review and assess alternative health care benefits, controls on health care spending, and other fundamental changes to the healthcare delivery system. Any proposed or actual changes could limit coverage for or the amounts federal and state governments will pay for health care products and services, which could also result in reduced demand for our products or additional pricing pressures, and limit or eliminate our spending on development projects and affect our ultimate profitability.

Third-Party Payor Coverage and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any products for which we may obtain regulatory approval. In the U.S., sales of any products for which we may receive regulatory approval for commercial sale will depend in part on the availability of coverage and reimbursement from third- party payors. Third-party payors include government authorities such as Medicare, Medicaid, TRICARE, and the Veterans Administration, managed care providers, private health insurers and other organizations.

The Medicaid Drug Rebate Program, which is part of the federal Medicaid program, a program for financially needy patients, among others, requires pharmaceutical manufacturers to enter into and have in effect a national rebate agreement with the Secretary of the Department of Health and Human Services as a condition for states to receive federal matching funds for the manufacturer's outpatient drugs furnished to Medicaid patients.

In order for a pharmaceutical product to receive federal reimbursement under Medicare Part B, part of the federal Medicare program covering outpatient items and services for the aged and disabled, and Medicaid programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the 340B drug pricing program, a federal program requiring manufacturers to provide discounts to certain safety-net providers. The required 340B discount on a given product is calculated based upon certain Medicaid Drug Rebate Program metrics reported by the manufacturer.

The process for determining whether a payor will provide coverage for a product is typically separate from the process for setting the reimbursement rate a payor will pay for the product. Third-party payors may limit coverage to specific products on an approved list or formulary which might not include all of the FDA-approved products for a particular indication. Also, third-party payors may refuse to include a particular branded product on their formularies or otherwise restrict patient access to a branded drug when a less costly generic equivalent or other alternative is available. However, under Medicare Part D—Medicare's outpatient prescription drug benefit—there are protections in place to ensure coverage and reimbursement for oncology products and all Part D prescription drug plans are required to cover substantially all anti-cancer agents. Furthermore, a payor's decision to provide coverage for a product does not imply an adequate reimbursement rate will be available. 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.

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. In order to obtain coverage and reimbursement for any product approved for sale, we may need to pursue compendia listings or conduct expensive pharmacoeconomic studies in

order to demonstrate the medical necessity and cost- effectiveness of any products, in addition to the costs required to obtain regulatory approvals. Our drug candidates may not be considered medically necessary or cost-effective. If third-party payors do not consider a product to be cost-effective compared to other available therapies, they may not cover an approved product as a benefit under their plans or, if they do, the level of payment may not be sufficient to allow a company to sell its products at a profit.

Other Healthcare Laws and Regulations

If we obtain regulatory approval of our products, we may be subject to various federal and state laws targeting fraud and abuse in the healthcare industry. These laws may impact, among other things, our proposed sales and marketing strategies. 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 affecting our ability to operate include, but are not limited to:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering, or paying remuneration (a term interpreted broadly to include anything of value, including, for example, gifts, discounts, and credits), directly or indirectly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, order, or recommendation of, an item or service reimbursable under a federal health care program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment to Medicare, Medicaid, or other third-party payors that are false or fraudulent, or making a false statement or record material to payment of a false claim or avoiding, decreasing, or concealing an obligation to pay money owed to the federal government;
- provisions of HIPAA, prohibiting knowingly and willfully executing a scheme to defraud any health care benefit program and making false statements relating to health care matters;
- provisions of HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, which imposes certain requirements relating to the privacy, security, and transmission of individually identifiable health information;
- the federal transparency laws, including the federal Physician Payment Sunshine Act, which was part of the Affordable Care Act, requiring manufacturers of certain drugs and biologics to track and disclose payments and other transfers of value they make to U.S. physicians and teaching hospitals, as well as physician ownership and investment interests in the manufacturer, which information is subsequently made publicly available in a searchable format on a CMS website; 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 payor, including commercial insurers, state transparency reporting and compliance laws, 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.

The ACA broadened the reach of the fraud and abuse laws by, among other things, amending the intent requirement of the federal Anti-Kickback Statute and the applicable criminal healthcare fraud statutes contained within 42 U.S.C. § 1320a-7b. 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 ACA provides the government may assert 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 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.

Employees

As of December 31, 2017, we had 38 employees, of which 29 are engaged in research and development activities. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Facilities

We lease a facility containing our research and development, laboratory, and office space, which consists of approximately 11,158 square feet located at 201 Elliott Avenue West, Seattle, Washington.

In January 2018, we entered into a lease amendment for approximately 6,184 square feet of additional office and laboratory space adjacent to our existing leased premises in Seattle, Washington.

The lease expires on December 31, 2019 and has two options to extend the lease term with each option enabling us to extend the lease term by twelve months.

Corporate Information

On July 24, 2017, Alpine Immune Sciences, Inc. completed its business combination with Nivalis Therapeutics, Inc., a publicly held company. In connection with the merger, Nivalis Therapeutics, Inc. changed its name to Alpine Immune Sciences, Inc. For additional information regarding this business combination, see Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations — Overview — Business Combination with Nivalis" contained elsewhere in this Annual Report on Form 10-K. Nivalis Therapeutics, Inc. was incorporated in Delaware in March 2007. Alpine Immune Sciences, Inc. (prior to its business combination with Nivalis Therapeutics, Inc.) was incorporated in Delaware on December 30, 2014.

Our principal executive office is located at 201 Elliott Avenue West, Suite 230, Seattle WA, 98119. Our telephone number is (206) 788-4545. Our website is www.alpineimmunesciences.com. Information contained in, or that can be accessed through, our website is not a part of, and is not incorporated into, this report.

This Annual Report on Form 10-K includes our trademarks and registered trademarks, including "vIgD" Each other trademark, trade name or service mark appearing in this Annual Report on Form 10-K belongs to its holder.

Item 1A. Risk Factors.

You should carefully consider the following risk factors, in addition to the other information contained in this Annual Report on Form 10-K, including the section of this report captioned "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes. If any of the events described in the following risk factors and the risks described elsewhere in this report occurs, our business, operating results and financial condition could be seriously harmed. This report on Form 10-K also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of factors that are described below and elsewhere in this report.

Risks Related to Our Financial Position, Capital Needs and Business

We will need to raise substantial additional funds to advance development of our therapeutic candidates, and we cannot guarantee we will have sufficient funds available in the future to develop and commercialize our current or future therapeutic candidates.

We will need to raise substantial additional funds to expand our development, regulatory, manufacturing, marketing, and sales capabilities or contract with other organizations to provide these capabilities to us. We have used substantial funds to develop our therapeutic candidates and will require significant funds to conduct further research and development, preclinical testing, and clinical trials of our therapeutic candidates, to seek regulatory approvals for our therapeutic candidates, and to manufacture and market products, if any are approved for commercial sale. As of December 31, 2017, we had $81.2 million in cash, cash equivalents and short-term investments. Based on our current operating plan, we believe our available cash and cash equivalents, will be sufficient to fund our planned level of operations for at least the next 12 months. Our future capital requirements and the period for which we expect our existing resources to support our operations may vary significantly from what we expect. Our monthly spending levels vary based on new and ongoing development and corporate activities. Because the length of time and activities associated with successful development of our therapeutic candidates are highly uncertain, we are unable to estimate the actual funds we will require for development and any approved marketing and commercialization activities. To execute our business plan, we will need, among other things:

- to obtain the human and financial resources necessary to develop, test, obtain regulatory approval for, manufacture, and market our therapeutic candidates;

- to build and maintain a strong intellectual property portfolio and avoid infringing intellectual property of third parties;
- to establish and maintain successful licenses, collaborations, and alliances;
- to satisfy the requirements of clinical trial protocols, including patient enrollment;
- to establish and demonstrate the clinical efficacy and safety of our therapeutic candidates;
- to obtain regulatory approvals;
- to manage our spending as costs and expenses increase due to preclinical studies, clinical trials, regulatory approvals, manufacturing scale-up, and commercialization;
- to obtain additional capital to support and expand our operations; and
- to market our products to achieve acceptance and use by the medical community in general.

If we are unable to obtain necessary funding on a timely basis or on acceptable terms, we may have to delay, reduce, or terminate our research and development programs, preclinical studies, or clinical trials, if any, limit strategic opportunities, or undergo reductions in our workforce or other corporate restructuring activities. We also could be required to seek funds through arrangements with collaborators or others requiring us to relinquish rights to some of our technologies or therapeutic candidates we would otherwise pursue on our own. We do not expect to realize revenue from product sales or royalties in the foreseeable future, if at all. Our revenue sources are, and will remain, extremely limited unless and until our therapeutic candidates are clinically tested, approved for commercialization, and successfully marketed.

To date, we have financed our operations primarily through the sale of equity securities and payments received under our license and research agreement with Kite, a Gilead company. We will be required to seek additional funding in the future and intend to do so through a combination of public or private equity offerings, debt financings, credit and loan facilities, research collaborations, and license agreements. Our ability to raise additional funds from these or other sources will depend on financial, economic, and other factors, many of which are beyond our control. Additional funds may not be available to us on acceptable terms or at all.

If we raise additional funds by issuing equity securities, our stockholders will suffer dilution, and the terms of any financing may adversely affect the rights of our stockholders. For example, in July 2016, we entered into a sales agreement with Cowen and Company, LLC, or Cowen, to sell up to $30.0 million worth of shares of our common stock, from time to time, through an “at the market” equity offering program under which Cowen will act as sales agent. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing stockholders. Debt financing, if available, may involve restrictive covenants limiting our flexibility in conducting future business activities, and, in the event of a liquidation or insolvency, debt holders would be repaid before holders of equity securities receive any distribution of corporate assets. Our failure to raise capital or enter into such other arrangements within a reasonable timeframe would have a negative impact on our financial condition, and we may have to delay, reduce, or terminate our research and development programs, preclinical or clinical trials, or undergo reductions in our workforce or other corporate restructuring activities.

We are an early stage biopharmaceutical company with a history of losses, we expect to continue to incur significant losses for the foreseeable future, and we may never achieve or maintain profitability and we have a limited operating history that may make it difficult for investors to evaluate the potential success of our business.

We are a development-stage immunotherapy company, with a limited operating history, focused on developing treatments for autoimmune/inflammatory diseases and cancer. Since inception, we have devoted our resources to developing novel protein-based immunotherapies using our proprietary scientific platform technology, which produces variant Ig domains or vIgDs. We have had significant operating losses since inception. For 2017, our net loss was $7.8 million. Substantially all of our losses have resulted from expenses incurred in connection with our research programs and from general and administrative costs associated with our operations. Our technologies and therapeutic candidates are in early stages of development, and we are subject to the risks of failure inherent in the development of therapeutic candidates based on novel technologies.

We have historically generated revenue primarily from the receipt of research funding and upfront payments under our license and research agreement with Kite. We have not generated, and do not expect to generate, any revenue from product sales for the foreseeable future, and we expect to continue to incur significant operating losses for the foreseeable future due

to the cost of research and development, preclinical studies, clinical trials, and the regulatory approval process for therapeutic candidates. The amount of future losses is uncertain. Our ability to achieve profitability, if ever, will depend on, among other things, our or our existing collaborators, or any future collaborators, successfully developing therapeutic candidates, obtaining regulatory approvals to market and commercialize therapeutic candidates, manufacturing any approved products on commercially reasonable terms, establishing a sales and marketing organization or suitable third party alternatives for any approved product, and raising sufficient funds to finance business activities. If we or our existing collaborators, or any future collaborators, are unable to develop and commercialize one or more of our therapeutic candidates or if sales revenue from any therapeutic candidate receiving approval is insufficient, we will not achieve profitability, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Our approach to the discovery and development of innovative therapeutic treatments based on our technology is unproven and may not result in marketable products.

We plan to develop novel protein-based immunotherapies using our proprietary vIgD technology for the treatment of cancer and autoimmune/inflammatory diseases. The potential to create therapies capable of working within and/or modulating an immune synapse, forcing a synapse to occur, or preventing a synapse from occurring is an important, novel attribute of our vIgDs. However, the scientific research forming the basis of our efforts to develop therapeutic candidates based on our platform is relatively new. Further, the scientific evidence to support the feasibility of developing therapeutic treatments based on our vIgDs is both preliminary and limited.

Relatively few therapeutic candidates based on immunoglobulin superfamily, or IgSF, domains have been tested in animals or humans, and a number of clinical trials conducted by other companies using IgSF domains technologies have not been successful. We may discover the therapeutic candidates developed using our scientific platform do not possess certain properties required for the therapeutic to be effective, such as the ability to remain stable or active in the human body for the period of time required for the therapeutic to reach the target tissue and/or cell. We currently have only limited data, and no conclusive evidence, to suggest we can introduce these necessary therapeutic properties into vIgDs. We may spend substantial funds attempting to introduce these properties and may never succeed in doing so. In addition, vIgDs may demonstrate different chemical and pharmacological properties in human subjects or patients than they do in laboratory studies. Even if our programs, such as the ALPN-101 program, have successful results in animal studies, they may not demonstrate the same chemical and pharmacological properties in humans and may interact with human biological systems in unforeseen, ineffective, or harmful ways. For example, in the context of immunotherapies, in a Phase I clinical trial of TeGenero AG's product candidate TGN1412, healthy volunteer subjects receiving the product candidate experienced a systemic inflammatory response resulting in renal and pulmonary failure requiring interventions such as dialysis and critical care support. Following this experience, regulatory agencies now ask for evaluation of immunomodulatory antibodies with a number of *in vitro* assays with human cells. While we are currently performing *in vitro* and *in vivo* proof of concept studies for several of our vIgDs preclinically, the risk profile in humans has yet to be assessed. As a result, we may never succeed in developing a marketable therapeutic, we may not become profitable, and the value of our common stock will decline.

Further, we believe that the FDA has no prior experience with vIgDs and no regulatory authority has granted approval to any person or entity, including our company, to market and commercialize therapeutics using vIgDs, which may increase the complexity, uncertainty, and length of the regulatory approval process for our therapeutic candidates. Our company and our current collaborators, or any future collaborators, may never receive approval to market and commercialize any therapeutic candidate. Even if our company or a collaborator obtains regulatory approval, the approval may be for disease indications or patient populations not as broad as we intended or desired or may require labeling, including significant use or distribution restrictions or safety warnings. Our company or a collaborator may be required to perform additional or unanticipated clinical trials to obtain approval or be subject to post-marketing testing requirements to maintain regulatory approval. If therapeutic candidates we develop using our scientific platform prove to be ineffective, unsafe, or commercially unviable, our entire platform and pipeline would have little, if any, value, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

The market may not be receptive to our therapeutic products based on a novel therapeutic modality, and we may not generate any future revenue from the sale or licensing of therapeutic products.

Even if approval is obtained for a therapeutic candidate, we may not generate or sustain revenue from sales of the therapeutic product due to factors such as whether the therapeutic product can be sold at a competitive price and otherwise accepted in the market. Therefore, any revenue from sales of the therapeutic product may not offset the costs of development. The therapeutic candidates we are developing are based on new technologies and therapeutic approaches. Market participants with significant influence over acceptance of new treatments, such as physicians and third-party payors, may not adopt a

treatment based on our vIgDs, and we may not be able to convince the medical community and third-party payors to accept and use, or to provide favorable coverage or reimbursement for, any therapeutic products developed by our company, our existing collaborator, or any future collaborators. Market acceptance of our therapeutic products will depend on, among other factors:

- the timing of our receipt of any marketing and commercialization approvals;
- the terms of any approvals and the countries in which approvals are obtained;
- the safety and efficacy of our therapeutic products;
- the prevalence and severity of any adverse side effects associated with our therapeutic products;
- the prevalence and severity of any adverse side effects associated with therapeutics of the same type or class as our therapeutic products;
- limitations or warnings contained in any labeling approved by the FDA or other regulatory authority;
- relative convenience and ease of administration of our therapeutic products;
- the willingness of patients to accept any new methods of administration;
- the success of our physician education programs;
- the availability of adequate government and third-party payor coverage and reimbursement;
- the pricing of our products, particularly as compared to alternative treatments;
- our ability to compliantly market and sell our products; and
- availability of alternative effective treatments for the disease indications our therapeutic products are intended to treat and the relative risks, benefits, and costs of those treatments.

With our focus on engineering wild-type IgSFs proteins, these risks may increase to the extent this field becomes more competitive or less favored in the commercial marketplace. Additional risks apply in relation to any disease indications we pursue which are classified as rare diseases and allow for orphan drug designation by regulatory agencies in major commercial markets, such as the United States, European Union, and Japan. Because of the small patient population for a rare disease, if pricing is not approved or accepted in the market at an appropriate level for an approved therapeutic product with orphan drug designation, such drug may not generate enough revenue to offset costs of development, manufacturing, marketing, and commercialization despite any benefits received from the orphan drug designation, such as market exclusivity, assistance in clinical trial design, or a reduction in user fees or tax credits related to development expense. Market size is also a variable in disease indications not classified as rare. Our estimates regarding potential market size for any rare indication may be materially different from what we discover to exist at the time we commence commercialization, if any, for a therapeutic product, which could result in significant changes in our business plan and have a material adverse effect on our business, financial condition, results of operations, and prospects.

If a therapeutic product with orphan drug designation subsequently receives the first FDA approval for the indication for which it has such designation, the therapeutic product is entitled to orphan product exclusivity, which means the FDA may not approve any other applications to market the same therapeutic product for the same indication, except in very limited circumstances, for seven years. Orphan drug exclusivity, however, could also block the approval of one of our therapeutic products for seven years if a competitor obtains approval of the same therapeutic product as defined by the FDA or if our therapeutic product is determined to be within the same class as the competitor’s therapeutic product for the same indication or disease.

As in the United States, we may apply for designation of a therapeutic product as an orphan drug for the treatment of a specific indication in the European Union before the application for marketing authorization is made. Sponsors of orphan drugs in the European Union can enjoy economic and marketing benefits, including up to ten years of market exclusivity for the approved indication unless another applicant can show its therapeutic product is safer, more effective, or otherwise clinically superior to the orphan-designated therapeutic product. The respective orphan designation and exclusivity frameworks in the United States and in the European Union are subject to change, and any such changes may affect our ability to obtain EU or U.S. orphan designations in the future.

Our therapeutic candidates are in early stages of development and may fail in development or suffer delays that materially and adversely affect their commercial viability.

We have no products on the market and all of our therapeutic candidates are in early stages of development. Our ability to achieve and sustain profitability depends on obtaining Institutional Review Board, or IRB, approval to conduct clinical trials at particular sites, regulatory approvals and successfully commercializing our therapeutic candidates, either alone or with third parties, such as our collaborator Kite. Before obtaining regulatory approval for the commercial distribution of our therapeutic candidates, we or a collaborator must conduct extensive preclinical tests and clinical trials to demonstrate the safety and efficacy in humans of our therapeutic candidates. Preclinical testing and clinical trials are expensive, difficult to design and implement, can take many years to complete, and are uncertain as to outcome. The start or end of a clinical study is often delayed or halted due to changing regulatory requirements, manufacturing challenges, required clinical trial administrative actions, slower than anticipated patient enrollment, changing standards of care, availability or prevalence of use of a comparative therapeutic or required prior therapy, clinical outcomes, or financial constraints. For instance, delays or difficulties in patient enrollment or difficulties in retaining trial participants can result in increased costs, longer development times, or termination of a clinical trial. Clinical trials of a new therapeutic candidate require the enrollment of a sufficient number of patients, including patients who are suffering from the disease the therapeutic candidate is intended to treat and who meet other eligibility criteria. Rates of patient enrollment are affected by many factors, including the size of the patient population, the eligibility criteria for the clinical trial, the age and condition of the patients, the stage and severity of disease, the nature of the protocol, the proximity of patients to clinical sites, and the availability of effective treatments for the relevant disease.

A therapeutic candidate can unexpectedly fail at any stage of preclinical and clinical development. The historical failure rate for therapeutic candidates is high due to scientific feasibility, safety, efficacy, changing standards of medical care, and other variables. The novelty of our platform may mean our failure rates are higher than historical norms. The results from preclinical testing or early clinical trials of a therapeutic candidate may not predict the outcome of later phase clinical trials of the therapeutic candidate, particularly in immuno-oncology and autoimmune/inflammatory disorders. We, the FDA, an IRB, an independent ethics committee, or other applicable regulatory authorities may suspend clinical trials of a therapeutic candidate at any time for various reasons, including a belief that subjects participating in such trials are being exposed to unacceptable health risks or adverse side effects. Similarly, an IRB or ethics committee may suspend a clinical trial at a particular trial site. We may not have the financial resources to continue development of, or to enter into collaborations for, a therapeutic candidate if we experience any problems or other unforeseen events delaying or preventing regulatory approval of, or our ability to commercialize, therapeutic candidates, including:

- negative or inconclusive results from our clinical trials, or the clinical trials of others for therapeutic candidates similar to ours, leading to a decision or requirement to conduct additional preclinical testing or clinical trials or abandon a program;
- serious and unexpected drug-related side effects experienced by participants in our clinical trials or by individuals using therapeutics similar to our therapeutic candidates;
- serious drug-related side effects experienced in the past by individuals using therapeutics similar to our therapeutic candidates;
- delays in submitting Investigational New Drug, or IND, applications or clinical trial applications, or comparable foreign applications, or delays or failure in obtaining the necessary approvals from regulators or IRBs to commence a clinical trial, or a suspension or termination of a clinical trial once commenced;
- conditions imposed by the FDA or comparable foreign authorities, such as the European Medicines Agency, or EMA, regarding the scope or design of our clinical trials;
- delays in enrolling research subjects in clinical trials;
- high drop-out rates of research subjects;
- inadequate supply or quality of therapeutic product or therapeutic candidate components, or materials or other supplies necessary for the conduct of our clinical trials, including those owned, manufactured, or provided by companies other than ours;
- greater than anticipated clinical trial costs, including the cost of any approved drugs used in combination with our therapeutic candidates;
- poor effectiveness of our therapeutic candidates during clinical trials;
- unfavorable FDA or other regulatory agency inspection and review of a clinical trial site;

- failure of our third-party contractors or investigators to comply with regulatory requirements or otherwise meet their contractual obligations in a timely manner, or at all;
- delays and changes in regulatory requirements, policies, and guidelines, including the imposition of additional regulatory oversight around clinical testing generally or with respect to our technology in particular; or
- varying interpretations of data by the FDA and similar foreign regulatory agencies.

Product development involves a lengthy and expensive process with an uncertain outcome, and results of earlier pre-clinical and clinical trials may not be predictive of future clinical trial results.

Clinical testing is expensive and generally takes many years to complete, and the outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of pre-clinical trials and early clinical trials of our product candidates may not be predictive of the results of larger, later-stage controlled clinical trials. Product candidates showing promising results in early-stage clinical trials may still suffer significant setbacks in subsequent clinical trials. We have conducted no clinical trials to date. We will have to conduct trials in our proposed indications to verify the results obtained to date and to support any regulatory submissions for further clinical development. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles despite promising results in earlier, smaller clinical trials. Moreover, clinical data are often susceptible to varying interpretations and analyses. We do not know whether Phase 1, Phase 2, Phase 3, or other clinical trials we may conduct will demonstrate consistent or adequate efficacy and safety with respect to the proposed indication for use sufficient to receive regulatory approval or market our therapeutic candidates.

To date, our revenue has been primarily derived from our license and research agreement with Kite, and we are dependent on Kite for the successful development of therapeutic candidates in the collaboration.

In October 2015, we entered into an exclusive, worldwide license and research agreement with Kite to research, develop, and commercialize engineered autologous T cell therapies incorporating two programs from our technology. Pursuant to the license and research agreement, we will be potentially eligible to receive up to $530.0 million in total milestone payments upon the successful completion of research, clinical, and regulatory milestones. We will also potentially be eligible to receive a low single-digit percentage royalty for sales on a licensed product-by-licensed product and country-by-country basis.

Continued success of our collaboration with Kite, and our realization of the milestone and royalty payments under the agreement, depends upon the efforts of Kite. Kite has sole discretion in determining and directing the efforts and resources, including the ability to discontinue all efforts and resources, it applies to the development and, if approval is obtained, commercialization and marketing of the therapeutic candidates covered by the collaboration. Kite may not be effective in obtaining approvals for the therapeutic candidates developed under the collaboration arrangement or marketing or arranging for necessary supply, manufacturing, or distribution relationships for any approved products. Kite may change its strategic focus or pursue alternative technologies in a manner resulting in reduced, delayed, or no revenue to us. Kite has a variety of marketed products and its own corporate objectives and strategies may not be consistent with our best interests. If Kite fails to develop, obtain regulatory approval for, or ultimately commercialize any therapeutic candidate under the collaboration or if Kite terminates the collaboration, our business, financial condition, results of operations, and prospects could be materially and adversely affected. In addition, any dispute or litigation proceedings we may have with Kite in the future could delay development programs, create uncertainty as to ownership of intellectual property rights, distract management from other business activities and generate substantial expense.

If we are unable to secure intellectual property rights to programs covered under the license and research agreement, Kite may terminate the agreement and our business, financial condition, results of operations, and prospects could be materially and adversely affected. In addition, any dispute or litigation proceedings we may have with Kite related to intellectual property rights or other aspects of the agreement or the relationship could delay development programs, create uncertainty as to ownership of intellectual property rights, may distract management from other business activities and generate substantial expense.

In October 2017, Kite was acquired by Gilead Pharma, Inc., or Gilead. While the research term of the collaboration was extended after the closing of the acquisition, there is no guarantee Gilead will place the same emphasis on the collaboration or wish to continue the collaboration. If either of these occurs, our business, financial condition, results of operations, and prospects could be materially and adversely affected.

If third parties on which we depend to conduct our preclinical studies, or any future clinical trials, do not perform as expected, fail to satisfy regulatory or legal requirements, or miss expected deadlines, our development program could be delayed, which may result in materially adverse effects on our business, financial condition, results of operations, and prospects.

We rely, in part, on third party clinical investigators, contract research organizations, or CROs, clinical data management organizations, and consultants to design, conduct, supervise, and monitor preclinical studies of our therapeutic candidates and may do the same for any clinical trials. Because we rely on third parties to conduct preclinical studies or clinical trials, we have less control over the timing, quality, compliance, and other aspects of preclinical studies and clinical trials than we would if we conducted all preclinical studies and clinical trials on our own. These investigators, CROs, and consultants are not our employees and we have limited control over the amount of time and resources they dedicate to our programs. These third parties may have contractual relationships with other entities, some of which may be our competitors, which may draw their time and resources away from our programs. The third parties with which we contract might not be diligent, careful, compliant, or timely in conducting our preclinical studies or clinical trials, resulting in the preclinical studies or clinical trials being delayed or unsuccessful.

If we cannot contract with acceptable third parties on commercially reasonable terms, or at all, or if these third parties do not carry out their expected duties, satisfy legal and regulatory requirements for the conduct of preclinical studies or clinical trials, or meet expected deadlines, our clinical development programs could be delayed and otherwise adversely affected. In all events, we are responsible for ensuring each of our preclinical studies and clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. The FDA and certain foreign regulatory authorities, such as the EMA, require preclinical studies to be conducted in accordance with applicable Good Laboratory Practices, or GLPs, and clinical trials to be conducted in accordance with applicable FDA regulations and Good Clinical Practices, or GCPs, including requirements for conducting, recording, and reporting the results of preclinical studies and clinical trials to assure data and reported results are credible and accurate and the rights, integrity, and confidentiality of clinical trial participants are protected. Our reliance on third parties we do not control does not relieve us of these responsibilities and requirements. Any such event could have a material adverse effect on our business, financial condition, results of operations, and prospects.

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

We have established in-house recombinant protein generation capabilities for producing sufficient protein materials to enable a portion of our current preclinical studies. We rely on third party supply and manufacturing partners to supply the materials, components, and manufacturing services for a portion of preclinical studies and all our clinical trial drug supplies. We do not own manufacturing facilities or supply sources for such components and materials for clinical trial supplies and our current manufacturing facilities are insufficient to supply such components and materials for all of our preclinical studies. Certain raw materials necessary for the manufacture of our therapeutic products, such as cell lines, are available from a single or limited number of source suppliers on a purchase order basis. There can be no assurance our supply of research and development, preclinical study, and clinical trial drugs and other materials will not be limited, interrupted, restricted in certain geographic regions, of satisfactory quality or quantity, or continue to be available at acceptable prices. In particular, any replacement of our therapeutic substance manufacturer could require significant effort and expertise and could result in significant delay of our preclinical or clinical activities because there may be a limited number of qualified replacements.

The manufacturing process for a therapeutic candidate is subject to FDA and foreign regulatory authority review. Suppliers and manufacturers must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by regulatory authorities in order to comply with regulatory standards, such as cGMPs. In the event any of our suppliers or manufacturers fails to comply with such requirements or to perform its obligations to us in relation to quality, timing, or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may experience shortages resulting in delayed shipments, supply constraints, and/or stock-outs of our products, be forced to manufacture the materials alone, for which we currently does not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on reasonable terms, if at all. In some cases, the technical skills or technology required to manufacture our therapeutic candidates may be unique or proprietary to the original manufacturer and we may have difficulty, or there may be contractual and intellectual property restrictions prohibiting us from, transferring such skills or technology to another third party and a feasible alternative may not exist. These factors may increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to have another third party manufacture our therapeutic candidates. If we are required to change manufacturers for any reason, we will be required to verify the new manufacturer maintains facilities and procedures complying with quality standards and with all

applicable regulations. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop therapeutic candidates in a timely manner, within budget, or at all.

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

- an inability to initiate or continue preclinical studies or clinical trials of therapeutic candidates under development;
- delay in submitting regulatory applications, or receiving regulatory approvals, for therapeutic candidates;
- the loss of the cooperation of a collaborator;
- subjecting manufacturing facilities of our therapeutic candidates to additional inspections by regulatory authorities;
- requirements to cease distribution or to recall batches of our therapeutic candidates; and
- in the event of approval to market and commercialize a therapeutic candidate, an inability to meet commercial demands for our products.

We may not successfully engage in strategic transactions, including any additional collaborations we seek, which could adversely affect our ability to develop and commercialize therapeutic candidates, impact our cash position, increase our expenses, and present significant distractions to our management.

From time to time, we may consider strategic transactions, such as collaborations, acquisitions of companies, asset purchases, and out- or in-licensing of therapeutic candidates or technologies. In particular, in addition to our current arrangements with Kite, we intend to evaluate and, if strategically attractive, seek to enter into additional collaborations, including with major biotechnology or pharmaceutical companies. The competition for collaborative partners is intense, and the negotiation process is time-consuming and complex. Any new collaboration may be on suboptimal terms for us, and we may be unable to maintain any new or existing collaboration if, for example, development or approval of a therapeutic candidate is delayed, sales of an approved therapeutic candidate do not meet expectations, or the collaborator terminates the collaboration. Any such collaboration, or other strategic transaction, may require us to incur non-recurring or other charges, increase our near- and long-term expenditures and pose significant integration or implementation challenges or disrupt our management or business.

These transactions would entail numerous operational and financial risks, including:

- exposure to unknown liabilities;
- disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired therapeutic candidates, or technologies;
- incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs;
- higher than expected collaboration, acquisition, or integration costs;
- write-downs of assets or goodwill, or incurring impairment charges or increased amortization expenses; and
- difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business or impairment of relationships with key suppliers, manufacturers, or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business.

Accordingly, although there can be no assurance we will undertake or successfully complete any transactions of the nature described above, any transactions we do complete may be subject to the foregoing or other risks and have a material adverse effect on our business, results of operations, financial condition, and prospects. Conversely, any failure to enter any collaboration or other strategic transaction beneficial to us could delay the development and potential commercialization of our therapeutic candidates and have a negative impact on the competitiveness of any therapeutic candidate reaching market.

We face competition from entities that have developed or may develop therapeutic candidates for our target disease indications, including companies developing novel treatments and technology platforms based on modalities and technology similar to us. If these companies develop technologies or therapeutic candidates more rapidly than we do, or their technologies, including delivery technologies, are more effective, our ability to develop and successfully commercialize therapeutic candidates may be adversely affected.

The development and commercialization of therapeutic candidates is highly competitive. We believe a significant number of products are currently under development, and may become commercially available in the future, for the treatment of conditions for which we may try to develop therapeutic candidates. There are also competitors to our proprietary therapeutic candidates currently in development, some of which may become commercially available before our therapeutic candidates.

We compete with a variety of multinational pharmaceutical companies and specialized biotechnology companies, as well as with technologies being developed at universities and other research institutions. Our competitors have developed, are developing, or may develop therapeutic candidates and processes competitive with our therapeutic candidates. Competitive therapeutic treatments include those already approved and accepted by the medical community and any new treatments entering or about to enter the market. We are aware of multiple companies developing therapies with the same target as at least one target of our lead program (ICOSL and/or CD28) as well as companies building novel platforms to generate multi-specific antibody or non-antibody-based targeting proteins. While it is still premature for us to determine which indications may be targeted by our lead program, potential competitors to our lead program include:

- an anti-ICOSL/B7RP-1 monoclonal antibody being developed by Amgen, Inc. (may be referred to as AMG557 or MEDI5872);
- an anti-ICOS monoclonal antibody being developed by MedImmune, Inc. (MEDI570);
- an anti-CD28 monoclonal antibody fragment being developed by OSE ImmunoTherapeutics SA and Johnson & Johnson Inc. (FR104);
- a CTLA-4 Ig fusion selective for CD86 fusion protein being developed by Astellas Pharma Inc. (ASP 2408/09);
- a CD28 superagonist monoclonal antibody being developed by TheraMab LLC (TAB08); and
- an anti-BAFF, anti-ICOSL bispecific antibody being developed by Amgen, Inc (AMG/570/MEDI0700)

Platforms potentially competitive with our scientific platform include:

- Nanobody® (Ablynx NV): Platform technology of single-domain, heavy-chain antibody fragments derived from camelidae (e.g., camels and llamas);
- DART® (Macrogenics Inc): Dual-Affinity Re-Targeting and Trident technology platforms bind multiple targets with a single molecule;
- Anticalin® (Pieris Pharmaceuticals Inc): Engineered proteins derived from natural lipocalins found in blood plasma;
- Targeted Immunomodulation™ (Compass Therapeutics LLC): Antibody discovery targeting the tumor-immune synapse;
- Harpoon Therapeutics Inc: Trispecific antigen-binding proteins;
- Various bispecific antibody platforms (e.g., Amgen Inc (BiTE®—approved), Roche AG (RG7828), Zymeworks Inc (Azymetric™), Xencor Inc (XmAb Bispecific), Compass Therapeutics (StitchMabs™);
- Five Prime Therapeutics®: Proprietary protein library and rapid protein production and testing platform;
- Regeneron®: VEGF Trap and VelociSuite® antibody technology platforms; and
- Shattuck Labs® Agonist Redirected Antibody platform claimed to bind tumor-necrosis factor (“TNF”) and checkpoint targets.

Additionally, there are a number of other therapies for autoimmune/inflammatory diseases or cancer approved or in development that are also competitive with our lead program and other programs in development. Many of the other therapies include other types of immunotherapies with different targets than our programs. Other potentially competitive therapies work in ways distinct from our development programs.

Many of our competitors have significantly greater financial, technical, manufacturing, marketing, sales, and supply resources or experience than we have. If we successfully obtain approval for any therapeutic candidate, we will face competition based on many different factors, including safety and effectiveness, ease with which our products can be administered and the extent to which patients accept relatively new routes of administration, timing and scope of regulatory approvals, availability and cost of manufacturing, marketing and sales capabilities, price, reimbursement coverage, and patent position of our products. Competing products could present superior treatment alternatives, including by being more effective, safer, less expensive, or marketed and sold more effectively than any products we may develop. Competitive products may make any products we develop obsolete or noncompetitive before we recover the expense of developing and commercializing our therapeutic candidates. Competitors could also recruit our employees, which could negatively impact our ability to execute our business plan.

Any inability to attract and retain qualified key management and technical personnel would impair our ability to implement our business plan.

Our success largely depends on the continued service of key management and other specialized personnel, including Mitchell H. Gold, M.D., our Executive Chairman and Chief Executive Officer, Jay R. Venkatesan, M.D., our President and a member of our board of directors, Stanford Peng, M.D., Ph.D., our Executive Vice President of Research and Development and Chief Medical Officer, and Paul Rickey, our Senior Vice President and Chief Financial Officer.

The loss of one or more members of our management team or other key employees or advisors could delay our research and development programs and materially harm our business, financial condition, results of operations, and prospects. The relationships our key managers have cultivated within our industry make us particularly dependent upon their continued employment with us. We are dependent on the continued service of our technical personnel because of the highly technical nature of our therapeutic candidates and technologies, and the specialized nature of the regulatory approval process. Because our management team and key employees are not obligated to provide us with continued service, they could terminate their employment with us at any time without penalty. We do not maintain key person life insurance policies on any of our management team members or key employees. Our future success will depend in large part on our continued ability to attract and retain other highly qualified scientific, technical, and management personnel, as well as personnel with expertise in clinical testing, manufacturing, governmental regulation, and commercialization. We face competition for personnel from other companies, universities, public and private research institutions, government entities, and other organizations, including significant competition in the Seattle employment market.

If our therapeutic candidates advance into clinical trials, we may experience difficulties in managing our growth and expanding our operations.

We have limited experience in therapeutic development and very limited experience with clinical trials of therapeutic candidates. As our therapeutic candidates enter and advance through preclinical studies and any clinical trials, we will need to expand our development, regulatory, and manufacturing capabilities or contract with other organizations to provide these capabilities for us. In the future, we expect to have to manage additional relationships with collaborators or partners, suppliers, and other organizations. Our ability to manage our operations and future growth will require us to continue to improve our operational, financial, and management controls, reporting systems, and procedures. We may not be able to implement improvements to our management information and control systems in an efficient or timely manner and may discover deficiencies in existing systems and controls.

If any of our therapeutic candidates are approved for marketing and commercialization and we are unable to develop sales, marketing and distribution capabilities on our own or enter into agreements with third parties to perform these functions on acceptable terms, we may be unable to successfully commercialize any such future products.

We currently have no sales, marketing, or distribution capabilities or experience. If any of our therapeutic candidates are approved, we will need to develop internal sales, marketing, and distribution capabilities to commercialize such products, which may be expensive and time-consuming, or enter into collaborations with third parties to perform these services. If we decide to market our products directly, we will need to commit significant financial, legal, and managerial resources to develop a marketing and sales force with technical expertise and supporting distribution, administration, and compliance capabilities. If we rely on third parties with such capabilities to market our approved products, or decide to co-promote products with collaborators, we will need to establish and maintain marketing and distribution arrangements with third parties, and there can be no assurance we will be able to enter into such arrangements on acceptable, compliant terms or at all. In entering into third-party marketing or distribution arrangements, any revenue we receive will depend upon the efforts of the third parties and there can be no assurance such third parties will establish adequate sales and distribution capabilities

or be successful in gaining market acceptance of any approved therapeutic. If we are not successful in commercializing any therapeutic approved in the future, either on our own or through third parties, our business, financial condition, results of operations, and prospects could be materially and adversely affected.

If we fail to comply with U.S. and foreign regulatory requirements, regulatory authorities could limit or withdraw any marketing or commercialization approvals we may receive and subject us to other penalties that could materially harm our business.

Our company, our therapeutic candidates, our suppliers, and our contract manufacturers, distributors, and contract testing laboratories are subject to extensive regulation by governmental authorities in the European Union, the United States, and other countries, with regulations differing from country to country.

Even if we receive marketing and commercialization approval of a therapeutic candidate, we and our third-party service providers will be subject to continuing regulatory requirements, including a broad array of regulations related to establishment registration and product listing, manufacturing processes, risk management measures, quality and pharmacovigilance systems, post-approval clinical studies, labeling, advertising and promotional activities, record keeping, distribution, adverse event reporting, import and export of pharmaceutical products, pricing, sales, and marketing, and fraud and abuse requirements. Any product promotion and advertising will also be subject to regulatory requirements and continuing regulatory review.

We are required to submit safety and other post market information and reports, and are subject to continuing regulatory review, including in relation to adverse patient experiences with the product and clinical results reported after a product is made commercially available, both in the United States and in any foreign jurisdiction in which we seek regulatory approval. The FDA and certain foreign regulatory authorities, such as the EMA, have significant post-market authority, including the authority to require labeling changes based on new safety information and to require post-market studies or clinical trials to evaluate safety risks related to the use of a product or to require withdrawal of the product from the market.

The FDA also has the authority to require a Risk Evaluation and Mitigation Strategies, or REMS, plan either before or after approval, which may impose further requirements or restrictions on the distribution or use of an approved therapeutic. The EMA now routinely requires risk management plans, or RMPs, as part of the marketing authorization application process, and such plans must be continually modified and updated throughout the lifetime of the product as new information becomes available. In addition, the relevant governmental authority of any EU member state can request an RMP whenever there is a concern about the risk/ benefit balance of the product.

The manufacturers and manufacturing facilities we use to make a future product, if any, will also be subject to periodic review and inspection by the FDA and other regulatory agencies, including for continued compliance with cGMP requirements. The discovery of any new or previously unknown problems with our third-party manufacturers, manufacturing processes or facilities may result in restrictions on the product, manufacturers or facilities, including withdrawal of the product from the market. If we rely on third-party manufacturers, we will not have control over compliance with applicable rules and regulations by such manufacturers.

If we or our collaborators, manufacturers, or service providers fail to comply with applicable continuing regulatory requirements in the U.S. or foreign jurisdictions in which we seek to market our products, we may be subject to, among other things, fines, warning and untitled letters, clinical holds, delay or refusal by the FDA or foreign regulatory authorities to approve pending applications or supplements to approved applications, suspension, refusal to renew or withdrawal of regulatory approval, product recalls, seizures, or administrative detention of products, refusal to permit the import or export of products, operating restrictions, inability to participate in government programs including Medicare and Medicaid, and total or partial suspension of production or distribution, injunction, restitution, disgorgement, debarment, civil penalties, and criminal prosecution.

Imposed price controls may adversely affect our future profitability.

In most countries, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of marketing approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic, and regulatory developments may further complicate pricing and reimbursement negotiations, and pricing negotiations may continue after reimbursement has been obtained.

Reference pricing used by various EU member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we or our collaborators may be required to conduct a clinical trial or other studies comparing the cost-effectiveness of our vIgD therapeutic candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of any product candidate approved for marketing is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business, financial condition, results of operations, or prospects could be adversely affected.

Our business entails a significant risk of product liability and our ability to obtain sufficient insurance coverage could harm our business, financial condition, results of operations, or prospects.

Our business exposes us to significant product liability risks inherent in the development, testing, manufacturing, and marketing of therapeutic treatments. Product liability claims could delay or prevent completion of our development programs. If we succeed in marketing products, such claims could result in an investigation by certain regulatory authorities, such as FDA or foreign regulatory authorities, of the safety and effectiveness of our products, our manufacturing processes and facilities, or our marketing programs and potentially a recall of our products or more serious enforcement action, limitations on the approved indications for which they may be used, or suspension or withdrawal of approvals. Regardless of the merits or eventual outcome, liability claims may also result in decreased demand for our products, injury to our reputation, costs to defend the related litigation, a diversion of management's time and our resources, substantial monetary awards to trial participants or patients, and a decline in our valuation. We currently have product liability insurance we believe is appropriate for our stage of development and may need to obtain higher levels of product liability insurance prior to marketing any therapeutic candidates. Any insurance we have or may obtain may not provide sufficient coverage against potential liabilities. Furthermore, clinical trial and product liability insurance is becoming increasingly expensive. As a result, we may be unable to obtain sufficient insurance at a reasonable cost to protect us against losses caused by product liability claims with a potentially material adverse effect on our business.

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, but is not limited to:

- intentional failures to comply with FDA or U.S. health care laws and regulations, or applicable laws, regulations, guidance, or codes of conduct set by foreign governmental authorities or self-regulatory industry organizations;
- a provision of inaccurate information to any governmental authorities such as FDA;
- noncompliance with manufacturing standards we may establish;
- noncompliance with federal and state healthcare fraud and abuse laws and regulations; and
- a failure to report financial information or data accurately or a failure to disclose unauthorized activities to us.

In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws, regulations, guidance and codes of conduct intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws, regulations, guidance statements, and codes of conduct may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive program, health care professional, 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, including debarment or disqualification of those employees from participation in FDA regulated activities and serious harm to our reputation. This could include violations of provisions of the U.S. federal Health Insurance Portability and Accountability Act, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, other U.S. federal and state law, and requirements of non-U.S. jurisdictions, including the European Union Data Protection Directive.

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, regulations, guidance,

or codes of conduct. If any such actions are instituted against us, and we are not successful in defending such actions or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines, exclusion from government programs, or other sanctions.

Our business involves the use of hazardous materials and we and our third-party manufacturers must comply with environmental laws and regulations, which may be expensive and restrict how we conduct business.

Our third-party manufacturers' activities and our own activities involve the controlled storage, use and disposal of hazardous and flammable materials, including the components of our pharmaceutical product candidates, test samples and reagents, biological materials and other hazardous compounds. We and our manufacturers are subject to federal, state, local and foreign laws and regulations governing the use, generation, manufacture, storage, handling and disposal of these hazardous materials. Although we believe our safety procedures for handling and disposing of these materials and waste products comply with the standards prescribed by these laws and regulations, we cannot eliminate the risk of accidental injury or contamination from the use, storage, handling or disposal of hazardous materials. In the event of an accident, state or federal or other applicable authorities may curtail our use of these materials and/or interrupt our business operations. In addition, if an accident or environmental discharge occurs, or if we discover contamination caused by prior operations, including by prior owners and operators of properties we acquire, we could be liable for cleanup obligations, damages, and fines. If such unexpected costs are substantial, this could significantly harm our financial condition and results of operations.

Compliance with governmental regulations regarding the treatment of animals used in research could increase our operating costs, which would adversely affect the commercialization of our technology.

The Animal Welfare Act, or AWA, is the federal law covering the treatment of certain animals used in research. Currently, the AWA imposes a wide variety of specific regulations governing the humane handling, care, treatment, and transportation of certain animals by producers and users of research animals, most notably relating to personnel, facilities, sanitation, cage size and feeding, watering and shipping conditions. Third parties with whom we contract are subject to registration, inspections, and reporting requirements under the AWA. Furthermore, some states have their own regulations, including general anti-cruelty legislation, which establish certain standards in handling animals. Comparable rules, regulations, and or obligations exist in many foreign jurisdictions. If we or our contractors fail to comply with regulations concerning the treatment of animals used in research, we may be subject to fines and penalties and adverse publicity, and our operations could be adversely affected.

Our information technology systems could face serious disruptions adversely affecting our business.

Our information technology and other internal infrastructure systems, including corporate firewalls, servers, leased lines, and connection to the Internet, face the risk of systemic failure potentially disruptive to our operations. A significant disruption in the availability of our information technology and other internal infrastructure systems could cause interruptions in our collaborations with our partners and delays in our research and development work.

Our current operations are concentrated in one location and any events affecting this location may have material adverse consequences.

Our current operations are located in facilities situated in Seattle. Any unplanned event, such as flood, fire, explosion, earthquake, extreme weather condition, medical epidemics, power shortage, power outage, telecommunication failure, or other natural or manmade accidents or incidents resulting in our company being unable to fully utilize the facilities, may have a material adverse effect on our ability to operate our business, particularly on a daily basis, and have significant negative consequences on our financial and operating conditions. Loss of access to these facilities may result in increased costs, delays in the development of our therapeutic candidates, or interruption of our business operations. As part of our risk management policy, we maintain insurance coverage at levels we believe are appropriate for our business. However, in the event of an accident or incident at these facilities, we cannot assure you the amounts of insurance will be sufficient to satisfy any damages and losses or that the insurance covers all risks. If our facilities are unable to operate because of an accident or incident or for any other reason, even for a short period of time, any or all of our research and development programs may be harmed. Any business interruption may have a material adverse effect on our business, financial position, results of operations, and prospects.

The investment of our cash, cash equivalents, and fixed income in marketable securities is subject to risks which may cause losses and affect the liquidity of these investments.

As of December 31, 2017, we had $81.2 million in cash, cash equivalents, and investments. We expect to invest our excess cash in marketable securities. These investments are subject to general credit, liquidity, market and interest rate risks, including potential future impacts similar to the impact of U.S. sub-prime mortgage defaults previously affecting various sectors of the financial markets and which caused credit and liquidity issues. We may realize losses in the fair value of these investments, an inability to access cash in these investments for a potentially meaningful period, or a complete loss of these investments, which would have a negative effect on our financial statements.

Changes in accounting rules and regulations, or interpretations thereof, could result in unfavorable accounting charges or require us to change our compensation policies.

Accounting methods and policies for biopharmaceutical companies, including policies governing revenue recognition, research and development and related expenses, and accounting for stock-based compensation, are subject to review, interpretation, and guidance from our auditors and relevant accounting authorities, including the SEC. Changes to accounting methods or policies, or interpretations thereof, may require us to reclassify, restate, or otherwise change or revise our financial statements.

Nivalis' pre-merger net operating loss carryforwards and certain other tax attributes are likely subject to limitations. The pre-merger net operating loss carryforwards and certain other tax attributes of Alpine and of the combined organization may also be subject to limitations as a result of ownership changes resulting from the merger.

In general, a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change net operating loss carryforwards, or NOLs, to offset future taxable income. In general, an ownership change occurs if the aggregate stock ownership of certain stockholders, generally stockholders beneficially owning five percent or more of a corporation's common stock, applying certain look-through and aggregation rules, increases by more than 50 percentage points over such stockholders' lowest percentage ownership during the testing period, generally three years. Nivalis may have experienced ownership changes in the past and may experience ownership changes in the future. In addition, the closing of the merger likely resulted in an ownership change for Nivalis. It is likely that, due to the method by which limitations on the utilization of NOL carryforwards are calculated, we will not be able to utilize any of Nivalis' net operating loss carryforwards and certain other tax attributes. It is also possible that Alpine's net operating loss carryforwards and certain other tax attributes may be subject to limitation as a result of ownership changes in the past and/or the closing of the merger. Consequently, even if we achieve profitability, we may not be able to utilize a material portion of Alpine's, or any of Nivalis', net operating loss carryforwards and certain other tax attributes, which could have a material adverse effect on cash flow and results of operations.

Provisions of our debt instruments may restrict our ability to pursue our business strategies.

Our term loan agreement requires us, and any debt financing we may obtain in the future may require us, to comply with various covenants that limit our ability to, among other things:

- dispose of assets;
- compete mergers or acquisitions;
- incur indebtedness;
- encumber assets;
- pay dividends or make other distributions to holders of our capital stock;
- make specified investments;
- engage in any new line or business; and
- engagement in certain transactions with our affiliates

These restrictions could inhibit our ability to pursue our business strategies. If we default under our term loan agreement, and such event of default is not cured or waived, the lenders could terminate commitments to lend and cause all amounts outstanding with respect to the debt to be due and payable immediately, which in turn could result in cross defaults under other debt instruments. Our assets and cash flow may not be sufficient to fully repay borrowings under our outstanding debt instruments if some or all of these instruments are accelerated upon a default. We may incur additional indebtedness in the future. The debt instruments governing such indebtedness could contain provisions that are as, or more, restrictive than our existing debt instruments. If we are unable to repay, refinance or restructure our indebtedness when payment is due, the

lenders could proceed against the collateral granted to them to secure such indebtedness or force us into bankruptcy or liquidation.

Our business may be affected by litigation and government investigations.

We may from time to time receive inquiries and subpoenas and other types of information requests from government authorities and others and we may become subject to claims and other actions related to our business activities. While the ultimate outcome of investigations, inquiries, information requests, and legal proceedings is difficult to predict, defense of litigation claims can be expensive, time-consuming and distracting, and adverse resolutions or settlements of those matters may result in, among other things, modification of our business practices, costs, and significant payments, any of which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We believe our development programs and platform have a particular mechanism of action, but this mechanism of action has not been proven conclusively.

Our scientific platform is novel and the underlying science is not exhaustively understood nor conclusively proven. In particular, the interaction of vIgDs with the immune synapse, the ability of vIgDs to slow, stop, restart, or accelerate immune responses, and the ability of vIgD domains to interact with multiple counterstructures is still largely theoretical. Graphical representations of proposed mechanisms of action of our therapies, the size, actual or relative, of our therapeutics, and how our therapeutics might interface with other cells within the human body, inside the immune synapse, or inside the disease and/or the tumor microenvironment are similarly theoretical and not yet conclusively proven. The lack of a proven mechanism of action may adversely affect our ability to raise sufficient capital, complete preclinical studies, adequately manufacture drug product, obtain regulatory clearance for clinical trials, or approval for marketing, or interfere with our ability to market our product to patients and physicians or achieve reimbursement from payors.

Because we have no products currently in human clinical trials, any inability to present our data in scientific journals or at scientific conferences could adversely impact our business and stock price.

We may from time to time submit data related to our research and development in peer-reviewed scientific publications or apply to present data related to our research and development at scientific or other conferences. We have no control over whether these submissions or applications are accepted. Even if accepted for a conference, we have no control over whether presentations at scientific conferences will be accepted for oral presentation, poster presentation, or abstract publication only. Even when accepted for publication, we have no control over the timing of the release of the publication. Rejection by publications, delays in publication, rejection for presentation, or a less-preferred format for a presentation may adversely impact our stock price, ability to raise capital, and business.

Our business may be affected by adverse scientific publications or editorial or discussant opinions.

We may from time to time publish data related to our research and development in peer-reviewed scientific publications or present data related to our research and development at scientific or other conferences. Editorials or discussants unrelated to us may provide opinions on our presented data unfavorable to us. In addition, scientific publications or presentations may be made which are critical of our science or research or the field of immunotherapy in general. This may adversely affect our ability to raise necessary capital, complete preclinical studies, adequately manufacture drug product, obtain regulatory clearance for clinical trials, or approval for marketing, or interfere with our ability to market our product to patients and physicians or achieve reimbursement from payors.

Risks Related to Our Intellectual Property

If we are not able to obtain and enforce patent protection for our technology, including therapeutic candidates, therapeutic products, and platform technology, development of our therapeutic candidates and platform, and commercialization of our therapeutic products may be materially and adversely affected.

Our success depends in part on our ability to obtain and maintain patents and other forms of intellectual property rights, including in-licenses of intellectual property rights of others, for our technology, including platform and therapeutic candidates and products, methods used to manufacture our therapeutic candidates, and products and methods for treating patients using our therapeutic candidates and products, as well as our ability to preserve our trade secrets, to prevent third parties from infringing upon our proprietary rights, and to operate without infringing upon the proprietary rights of others. As of December 31, 2017, our patent portfolio consists of over 13 pending patent applications. We may not be able to apply for patents on certain aspects of our technology, including therapeutic candidates and products, in a timely fashion or at all. Any

future patents we obtain may not be sufficiently broad to prevent others from using our technology or from developing competing therapeutics and technology. There is no guarantee that any of our pending patent applications will result in issued or granted patents, any of our issued or granted patents will not later be found to be invalid or unenforceable, or any issued or granted patents will include claims sufficiently broad to cover our technology, including therapeutic candidates and products, or to provide meaningful protection from our competitors. Moreover, the patent position of pharmaceutical and biotechnology companies can be highly uncertain because it involves complex legal and factual questions. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent our current and future technology, including therapeutic candidates and products, are covered by valid and enforceable patents or are effectively maintained as trade secrets. If third parties disclose or misappropriate our proprietary rights, it may materially and adversely impact our competitive position in the market.

The U.S. Patent and Trademark Office, or USPTO, and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment, and other provisions during the patent process. There are situations in which noncompliance can result in abandonment or lapse of a patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, competitors might be able to enter the market earlier than would otherwise have been the case. The standards applied by the USPTO and foreign patent offices in granting patents are not always applied uniformly or predictably. For example, there is no uniform worldwide policy regarding patentable subject matter or the scope of claims allowable in biotechnology and pharmaceutical patents. As such, we do not know the degree of future protection we will have on our technology, including therapeutic candidates and products. While we will endeavor to try to protect our technology, including therapeutic candidates and products, with intellectual property rights such as patents, as appropriate, the process of obtaining patents is time-consuming, expensive, and sometimes unpredictable, and we can provide no assurances our technology, including therapeutic candidates and products, will be adequately protected in the future against unauthorized uses or competing claims by third parties.

In addition, recent and future changes to the patent laws and to the rules of the USPTO or other foreign patent offices may have a significant impact on our ability to protect our technology, including therapeutic candidates and products, and enforce our intellectual property rights. For example, the Leahy-Smith America Invents Act enacted in 2011 involves significant changes in patent legislation. In addition, we cannot assure you court rulings or interpretations of any court decision will not adversely impact our patents or patent applications. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, there also may be uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents we might obtain in the future.

Once granted, patents may remain open to opposition, interference, re-examination, post-grant review, inter partes review, nullification, or derivation action in court or before patent offices or similar proceedings for a given period before or after allowance or grant, during which time third parties can raise objections against such initial grant. In the course of such proceedings, which may continue for a protracted period of time, the patent owner may be compelled to limit the scope of the allowed or granted claims thus attacked, or may lose the allowed or granted claims altogether. Our patent risks include that:

- others may, or may be able to, make, use or sell compounds that are the same as or similar to our therapeutic candidates and products but that are not covered by the claims of the patents we own or license;
- we or our licensors, collaborators, or any future collaborators may not be the first to file patent applications covering certain aspects of our technology, including therapeutic candidates and products;
- others may independently develop similar or alternative technology or duplicate any of our technology without infringing our intellectual property rights;
- a third party may challenge our patents and, if challenged, a court may not hold that our patents are valid, enforceable, and non-infringing;
- a third party may challenge our patents in various patent offices and, if challenged, we may be compelled to limit the scope of our allowed or granted claims or lose the allowed or granted claims altogether;
- any issued patents we own or have licensed may not provide us with any competitive advantages, or may be challenged by third parties;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others could harm our business; and

- our competitors could conduct research and development activities in countries where we do not or will not have enforceable patent rights and then use the information learned from such activities to develop competitive products for sale in major commercial markets where we do not or will not have enforceable patent rights.

We license patent rights from third-party owners or licensees. If such owners or licensees do not properly or successfully obtain, maintain or enforce the patents underlying such licenses, or if they retain or license to others any competing rights, our competitive position and business prospects may be materially and adversely affected.

We rely, and will continue to rely, upon intellectual property rights licensed from third parties to protect our technology, including platform technology and therapeutic candidates and products. We are a party to a number of licenses granting us rights to third-party intellectual property necessary or useful for our business. We may also license additional third-party intellectual property in the future. Our success will depend in part on the ability of our licensors to obtain, maintain, and enforce patent protection for our licensed intellectual property, in particular those patents to which we have secured exclusive rights. Our licensors may elect not to prosecute, or may be unsuccessful in prosecuting, the patent applications licensed to us. Even if patents issue or are granted, our licensors may fail to maintain these patents, may determine not to pursue litigation against other companies infringing these patents, or may pursue litigation less aggressively than we would. Further, substantially all of our existing licenses are non-exclusive and we may not be able to obtain exclusive rights in licenses obtained in the future, which would potentially allow third parties to develop competing products or technology. Without protection for, or exclusive right to, the intellectual property we license, other companies might be able to offer substantially identical products for sale, which could adversely affect our competitive business position and harm our business prospects. In addition, we may sublicense our rights under our third-party licenses to current or future collaborators or any future strategic partners. Any impairment of these sublicensed rights could result in reduced revenue under or result in termination of an agreement by one or more of our collaborators or any future strategic partners.

We may be unable to protect our patent intellectual property rights throughout the world.

Obtaining a valid and enforceable issued or granted patent covering our technology, including therapeutic candidates and products, in the United States and worldwide can be extremely costly. In jurisdictions where we have not obtained patent protection, competitors may use our technology, including therapeutic candidates and products, to develop their own products, and further, may commercialize such products in those jurisdictions and export otherwise infringing products to territories where we have not obtained patent protection. In certain instances, a competitor may be able to export otherwise infringing products in territories where we will obtain patent protection. In jurisdictions outside the United States where we will obtain patent protection, it may be more difficult to enforce a patent as compared to the United States. Competitor products may compete with our future products in jurisdictions where we do not or will not have issued or granted patents or where our issued or granted patent claims or other intellectual property rights are not sufficient to prevent competitor activities in these jurisdictions. The legal systems of certain countries, particularly certain developing countries, make it difficult to enforce patents and such countries may not recognize other types of intellectual property protection, particularly relating to biopharmaceuticals. This could make it difficult for us to prevent the infringement of our patents or marketing of competing products in violation of our proprietary rights generally in certain jurisdictions. 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.

We generally file a provisional patent application first (a priority filing) at the USPTO. A U.S. utility application and international application under the Patent Cooperation Treaty, or PCT, are usually filed within twelve months after the priority filing. Based on the PCT filing, national and regional patent applications may be filed in various international jurisdictions, such as the European Union, Japan, Australia, and Canada. We have so far not filed for patent protection in all national and regional jurisdictions where such protection may be available. In addition, we may decide to abandon national and regional patent applications before they are granted. Finally, the grant proceeding of each national or regional patent is an independent proceeding which may lead to situations in which applications might in some jurisdictions be refused by the relevant registration authorities, while granted by others. It is also quite common that, depending on the country, various scopes of patent protection may be granted on the same therapeutic candidate, product, or technology. The laws of some jurisdictions do not protect intellectual property rights to the same extent as the laws in the United States, and many companies have encountered significant difficulties in protecting and defending such rights in such jurisdictions. If we or our licensors encounter difficulties in protecting, or are otherwise precluded from effectively protecting, the intellectual property rights important for our business in such jurisdictions, the value of these rights may be diminished and we may face additional competition from others in those jurisdictions. Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited

remedies, which could materially diminish the value of such patent. If we or any of our licensors are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position in the relevant jurisdiction may be impaired and our business and results of operations may be adversely affected.

We or our licensors, collaborators, or any future strategic partners may become subject to third party claims or litigation alleging infringement of patents or other proprietary rights or seeking to invalidate patents or other proprietary rights, and we may need to resort to litigation to protect or enforce our patents or other proprietary rights, all of which could be costly, time consuming, delay or prevent the development of our therapeutic candidates and commercialization of our therapeutic products, or put our patents and other proprietary rights at risk.

We or our licensors, licensees, collaborators, or any future strategic partners may be subject to third-party claims for infringement or misappropriation of patent or other proprietary rights. We are generally obligated under our license or collaboration agreements to indemnify and hold harmless our licensors, licensees, or collaborators for damages arising from intellectual property infringement by us. If we or our licensors, licensees, collaborators, or any future strategic partners are found to infringe a third-party patent or other intellectual property rights, we could be required to pay damages, potentially including treble damages, if we are found to have willfully infringed. In addition, we or our licensors, licensees, collaborators, or any future strategic partners may choose to seek, or be required to seek, a license from a third party, which may not be available on acceptable terms, if at all. Even if a license can be obtained on acceptable terms, the rights may be non-exclusive, which could give our competitors access to the same technology or intellectual property rights licensed to or from us. If we fail to obtain a required license, we or our licensee or collaborator, or any future licensee or collaborator, may be unable to effectively market therapeutic products based on our technology, which could limit our ability to generate revenue or achieve profitability and possibly prevent us from generating revenue sufficient to sustain our operations. In addition, we may find it necessary to pursue claims or initiate lawsuits to protect or enforce our patent or other intellectual property rights. The cost to us in defending or initiating any litigation or other proceeding relating to patent or other proprietary rights, even if resolved in our favor, could be substantial, and litigation would divert our management's attention. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could delay our research and development efforts and limit our ability to continue our s operations.

Although we do not believe our technology infringes the intellectual property rights of others, we are aware of one or more patents or patent applications that may relate to our technology, and third parties may assert against our claims alleging infringement of their intellectual property rights regardless of whether their claims have merit. Infringement claims could harm our reputation, may result in the expenditure of significant resources to defend and resolve such claims, and could require us to pay monetary damages if we are found to have infringed the intellectual property rights of others.

If we were to initiate legal proceedings against a third party to enforce a patent covering our technology, including therapeutic candidates and products, the defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, for example, patent ineligibility, lack of novelty, lack of written description, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity and unenforceability during patent litigation is unpredictable. With respect to the validity question, for example, we cannot be certain there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our technology, including therapeutic candidates and products. Such a loss of patent protection could have a material adverse impact on our business. Patents and other intellectual property rights also will not protect our technology, including therapeutic candidates and products, if competitors design around our protected technology, including therapeutic candidates and products, without legally infringing our patents or other intellectual property rights.

It is also possible we have failed to identify relevant third-party patents or applications. For example, patent applications in the United States and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our technology, including therapeutic candidates and products, could have been filed by others without our knowledge. Additionally, pending patent applications which have been published can, subject to certain limitations, be later amended in a manner that could cover our technology, including therapeutic candidates and products. Third party intellectual property rights holders may also actively bring infringement claims against us. We cannot guarantee we will be able to successfully settle or otherwise resolve such infringement claims. If we are unable to successfully settle future claims

on terms acceptable to us, we may be required to engage in or continue costly, unpredictable, and time-consuming litigation and may be prevented from, or experience substantial delays in, marketing our technology, including therapeutic candidates and products. If we fail in any such dispute, in addition to being forced to pay damages, we may be temporarily or permanently prohibited from commercializing our technology, including a therapeutic product, held to be infringing. We might, if possible, also be forced to redesign therapeutic candidates or products so we no longer infringe the third party intellectual property rights. Any of these events, even if we were ultimately to prevail, could require us to divert substantial financial and management resources we would otherwise be able to devote to our business.

If we fail to comply with our obligations under any license, collaboration, or other agreements, we may be required to pay damages and could lose intellectual property rights necessary for developing and protecting our technology, including our platform technology, therapeutic candidates, and therapeutic products, or we could lose certain rights to grant sublicenses, either of which could have a material adverse effect on our results of operations and business prospects.

Our current licenses impose, and any future licenses we enter into are likely to impose, various development, commercialization, funding, milestone, royalty, diligence, sublicensing, insurance, patent prosecution and enforcement, and other obligations on us. If we breach any of these obligations, or use the intellectual property licensed to us in an unauthorized manner, we may be required to pay damages and the licensor may have the right to terminate the license, which could result in us being unable to develop, manufacture, and sell products covered by the licensed technology or enable a competitor to gain access to the licensed technology. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor's rights. In addition, while we cannot currently determine the amount of the royalty obligations we would be required to pay on future sales of licensed products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in therapeutic products we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize therapeutic products, we may be unable to achieve or maintain profitability.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patent protection for certain aspects of our technology, including platform technology and therapeutic candidates and products, we also consider trade secrets, including confidential and unpatented know-how, important to the maintenance of our competitive position. We protect trade secrets and confidential and unpatented know-how, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to such knowledge, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors, and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants obligating them to maintain confidentiality and assign their inventions to us. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, some courts in the United States and certain foreign jurisdictions are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our competitive position would be harmed.

We are also subject both in the United States and outside the United States to various regulatory schemes regarding requests for the information we provide to regulatory authorities, which may include, in whole or in part, trade secrets or confidential commercial information. While we are likely to be notified in advance of any disclosure of such information and would likely object to such disclosure, there can be no assurance our challenge to the request would be successful.

We may be in the future subject to claims we or our employees or consultants have wrongfully used or disclosed alleged trade secrets of our employees' or consultants' former employers or their clients. These claims may be costly to defend and if we do not successfully do so, we may be required to pay monetary damages, may be prohibited from using some of our research and development and may lose valuable intellectual property rights or personnel.

Many of our employees were previously employed at universities or biotechnology or pharmaceutical companies, including our current and potential competitors. We may receive correspondence from other companies alleging the improper use or disclosure, and have received, and may in the future receive, correspondence from other companies regarding the use or disclosure, by certain of our employees who have previously been employed elsewhere in our industry, including with our competitors, of their former employer's trade secrets or other proprietary information. Responding to

these allegations can be costly and disruptive to our business, even when the allegations are without merit, and can be a distraction to management. We may be subject to claims in the future that our employees have, or we have, inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If we fail in defending current or future claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, personnel, or the ability to use some of our research and development. A loss of intellectual property, key research personnel, or their work product could hamper our ability to commercialize, or prevent us from commercializing, our therapeutic candidates, which could severely harm our business. Even if we are successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be materially and adversely affected.

Our trademarks or trade names may be challenged, infringed, circumvented, or declared generic or determined to be infringing on other marks. Any trademark litigation could be expensive. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be materially and adversely affected.

Third parties may independently develop similar or superior technology.

There can be no assurance others will not independently develop, or have not already developed, similar or more advanced technologies than our technology or that others will not design around, or have not already designed around, aspects of our technology or our trade secrets developed therefrom. If third parties develop technology similar or superior to our technology, or they successfully design around our current or future technology, our competitive position, business prospects, and results of operations could be materially and adversely affected.

Breaches of our internal computer systems, or those of our contractors, vendors, or consultants, may place our patents or proprietary rights at risk.

The loss of preclinical data or data from any future clinical trial involving our technology, including therapeutic candidates and products, could result in delays in our development and regulatory filing efforts and significantly increase our costs. In addition, theft or other exposure of data may interfere with our ability to protect our intellectual property, trade secrets, and other information critical to our operations. We have experienced in the past, and may experience in the future, unauthorized intrusions into our internal computer systems, including portions of our internal computer systems storing information related to our platform technology, therapeutic candidates and products, and we can provide no assurances that certain sensitive and proprietary information relating to one or more of our therapeutic candidates or products has not been, or will not in the future be, compromised. Although we have invested significant resources to enhance the security of our computer systems, there can be no assurances we will not experience additional unauthorized intrusions into our computer systems, or those of our CROs, vendors, contractors, and consultants, that we will successfully detect future unauthorized intrusions in a timely manner, or that future unauthorized intrusions will not result in material adverse effects on our financial condition, reputation, or business prospects. Payments related to the elimination of ransomware may materially affect our financial condition and results of operations.

Certain data breaches must also be reported to affected individuals and the government, and in some cases to the media, under provisions of HIPAA, as amended by HITECH, other U.S. federal and state law, and requirements of non-U.S. jurisdictions, including the European Union Data Protection Directive, and financial penalties may also apply.

Risks Related to Government Regulation

We may be unable to obtain U.S. or foreign regulatory approval and, as a result, may be unable to commercialize our therapeutic candidates.

Our therapeutic candidates are subject to extensive governmental regulations relating to, among other things, research, development, testing, manufacture, quality control, approval, labeling, packaging, promotion, storage, record-keeping, advertising, distribution, sampling, pricing, sales and marketing, safety, post-approval monitoring and reporting, and export and import of drugs. Rigorous preclinical testing and clinical trials and an extensive regulatory approval process are required to be completed successfully in the United States and in many foreign jurisdictions before a new therapeutic can be marketed. Satisfaction of these and other regulatory requirements is costly, time consuming, uncertain, and subject to unanticipated

delays. It is possible none of the therapeutic candidates we may develop will obtain the regulatory approvals necessary for us or our collaborators to begin selling them.

We have very limited experience in conducting and managing the clinical trials necessary to obtain regulatory approvals, including approval by the FDA as well as foreign regulatory authorities, such as the EMA. The time required to obtain FDA and foreign regulatory approvals is unpredictable but typically takes many years following the commencement of clinical trials, depending upon the type, complexity, and novelty of the therapeutic candidate. The standards the FDA and its foreign counterparts use when regulating us are not always applied predictably or uniformly and can change. Any analysis we perform of data from preclinical and clinical activities is subject to confirmation and interpretation by regulatory authorities, who could delay, limit, or prevent regulatory approval. We may also encounter unexpected delays or increased costs due to new government regulations, for example, from future legislation or administrative action, or from changes in the policy of FDA or foreign regulatory authorities during the period of product development, clinical trials, and regulatory review by the FDA or foreign regulatory authorities. It is impossible to predict whether legislative changes will be enacted, or whether FDA or foreign laws, regulations, guidance, or interpretations will be changed, or what the impact of such changes, if any, may be.

Because the therapeutics we are developing may represent a new class of therapeutics, the FDA and its foreign counterparts have not yet established any definitive policies, practices, or guidelines in relation to these drugs. While we believe the therapeutic candidates we are currently developing are regulated as new biological products under the Public Health Service Act, or PHSA, the FDA could decide to reclassify them, namely to regulate them or other products we may develop as drugs under the Federal Food, Drug, and Cosmetic Act, or FDCA. The lack of policies, practices, or guidelines may hinder or slow review by the FDA or foreign regulatory authorities of any regulatory filings we may submit. Moreover, the FDA or foreign regulatory authorities may respond to these submissions by defining requirements we may not have anticipated. Such responses could lead to significant delays in the clinical development of our therapeutic candidates. In addition, because there may be approved treatments for some of the diseases for which we may seek approval, in order to receive regulatory approval, we may need to demonstrate through clinical trials the therapeutic candidates we develop to treat these diseases, if any, are not only safe and effective, but safer or more effective than existing products.

Any delay or failure in obtaining required approvals could have a material adverse effect on our ability to generate revenues from the particular therapeutic candidate for which we are seeking approval. Furthermore, any regulatory approval to market a product may be subject to limitations on the approved uses for which we may market the product or the labeling or other restrictions. Regulatory authorities also may impose requirements for costly post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the therapeutic. In addition, the FDA has the authority to require a REMS plan as part of a Biologics License Application, or BLA, or New Drug Application, or NDA, or after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug or biologic, such as limiting prescribing to certain physicians or medical centers that have undergone specialized training, limiting treatment to patients who meet certain safe-use criteria, and requiring treated patients to enroll in a registry. These limitations and restrictions may limit the size of the market for the therapeutic and affect coverage and reimbursement by third-party payors.

We are also subject to numerous foreign regulatory requirements governing, among other things, the conduct of clinical trials, manufacturing, marketing authorization, pricing, and third-party reimbursement. The foreign regulatory approval process varies among countries and may include all of the risks associated with FDA approval described above as well as risks attributable to the satisfaction of local regulations in foreign jurisdictions. Moreover, the time required to obtain approval may differ from that required to obtain FDA approval. Approval by the FDA does not ensure approval by regulatory authorities outside the U.S. and vice versa.

If we or our existing or future collaborators, manufacturers, or service providers fail to comply with healthcare laws and regulations, we or such other parties could be subject to enforcement actions, which could adversely affect our ability to develop, market, and sell our therapeutics and may harm our reputation.

Although we do not currently have any products on the market, once we begin commercializing our therapeutic candidates we will be subject to additional healthcare statutory and regulatory requirements and enforcement by the federal, state, and foreign governments of the jurisdictions in which we conduct our business. Healthcare providers, physicians, and third-party payors play a primary role in the recommendation and prescription of any therapeutic candidates for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud, abuse, and other healthcare laws and regulations constraining the business or financial arrangements and relationships through which we market, sell, and distribute the therapeutic candidates for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons from soliciting, receiving, offering, or providing remuneration, directly or indirectly, to induce either the referral of an individual for a healthcare item or service, or the purchasing or ordering of an item or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare or Medicaid;
- the U.S. federal False Claims Act, which imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, false or fraudulent claims for payment or making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government. In addition, the government may assert a claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;
- state all-payor fraud laws, which impose criminal and civil liability for executing a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing, or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items or services; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, HITECH, and their implementing regulations, which impose obligations on certain covered entity healthcare providers, health plans, and healthcare clearinghouses as well as their business associates performing certain services involving the use or disclosure of individually identifiable health information, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information, and require notification to affected individuals and regulatory authorities of certain breaches of security of individually identifiable health information;
- the federal Physician Payment Sunshine Act and its implementing regulations, also referred to as “Open Payments,” issued under the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or ACA, and any subsequent amending legislation or executive actions, which require manufacturers of pharmaceutical and biological drugs reimbursable under Medicare, Medicaid, and Children’s Health Insurance Programs to report to the Department of Health and Human Services all consulting fees, travel reimbursements, research grants, and other payments, transfers of value or gifts made to physicians and teaching hospitals with limited exceptions; and
- analogous state laws and regulations, such as, state anti-kickback and false claims laws potentially applicable to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; and some state laws require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other healthcare providers or marketing expenditures, 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 often are not preempted by HIPAA, thus complicating compliance efforts.

Ensuring our future business arrangements with third-parties comply with applicable healthcare laws and regulations could involve substantial costs. If our operations are found to be in violation of any such requirements, we may be subject to penalties, including civil or criminal penalties, monetary damages, the curtailment or restructuring of our operations, or exclusion from participation in government contracting, healthcare reimbursement, or other government programs, including Medicare and Medicaid, any of which could adversely affect our financial results. Although effective compliance programs can mitigate the risk of investigation and prosecution for violations of these laws, these risks cannot be entirely eliminated. Any action against us for an alleged or suspected violation could cause our company to incur significant legal expenses and could divert our management’s attention from the operation of our business, even if our defense is successful. In addition, achieving and sustaining compliance with applicable laws and regulations may be costly to us in terms of money, time, and resources.

If we or our current or future collaborators, manufacturers, or service providers fail to comply with applicable federal, state, or foreign laws or regulations, we could be subject to enforcement actions, which could affect our ability to develop, market, and sell our therapeutics successfully and could harm our reputation and lead to reduced acceptance of our therapeutics by the market. These enforcement actions include, among others:

- adverse regulatory inspection findings;

- warning or untitled letters;
- voluntary product recalls with public notification or medical product safety alerts to healthcare professionals;
- restrictions on, or prohibitions against, marketing our therapeutics;
- restrictions on, or prohibitions against, importation or exportation of our therapeutics;
- suspension of review or refusal to approve pending applications or supplements to approved applications;
- exclusion from participation in government-funded healthcare programs;
- exclusion from eligibility for the award of government contracts for our therapeutics;
- FDA debarment;
- suspension or withdrawal of therapeutic approvals;
- seizures or administrative detention of therapeutics;
- injunctions; and
- civil and criminal penalties and fines.

Any therapeutics we develop may become subject to unfavorable pricing regulations, third-party coverage and reimbursement practices, or healthcare reform initiatives, thereby harming our business.

The regulations governing marketing approvals, pricing, coverage, and reimbursement for new drugs and biologics vary widely from country to country. Many countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. Although we intend to monitor these regulations, our programs are currently in the early stages of development and we will not be able to assess the impact of price regulations for a number of years. As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations delaying our commercial launch of the product and negatively impacting the revenues we are able to generate from the sale of the product in that country.

Our ability to commercialize any therapeutics successfully also will depend in part on the extent to which coverage and reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers, and other organizations. However, there may be significant delays in obtaining coverage for newly-approved therapeutics. Moreover, eligibility for coverage does not necessarily signify a therapeutic will be reimbursed in all cases or at a rate covering our costs, including research, development, manufacture, sale, and distribution costs. Also, interim payments for new therapeutics, if applicable, may be insufficient to cover our costs and may not be made permanent. Thus, even if we succeed in bringing one or more therapeutics to the market, these products may not be considered cost-effective, and the amount reimbursed for any of them may be insufficient to allow us to sell them on a competitive basis. Because our programs are in the early stages of development, we are unable at this time to determine their cost effectiveness, coverage prospects, potential compendia listings, or the likely level or method of reimbursement, if covered.

It is equally difficult for us to predict how Medicare coverage and reimbursement policies will be applied to our products in the future, and coverage and reimbursement under different federal healthcare programs are not always consistent. Medicare reimbursement rates may also reflect budgetary constraints placed on the Medicare program.

Third-party payors often rely upon Medicare coverage policies and payment limitations in setting their own reimbursement rates. These coverage policies and limitations may rely, in part, on compendia listings for approved therapeutics. Our inability to promptly obtain relevant compendia listings, coverage, and adequate reimbursement from both government-funded and private payors for new therapeutics we develop and for which we obtain regulatory approval could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products, and our financial condition.

We believe the efforts of governments and third-party payors to contain or reduce the cost of healthcare, and legislative and regulatory proposals to broaden the availability of healthcare, will continue to affect the business and financial condition of pharmaceutical and biopharmaceutical companies. A number of legislative and regulatory changes in the healthcare system in the United States and other major healthcare markets have been proposed, and such efforts have

expanded substantially in recent years. These developments could, directly or indirectly, affect our ability to sell our products, if approved, at a favorable price. In addition, third-party payors who reimburse patients or healthcare providers, such as government and private insurance plans, are seeking greater upfront discounts, additional rebates, and other concessions to reduce the prices for therapeutics. If the price we are able to charge for any therapeutics we develop, or the reimbursement provided for such products, is inadequate, our return on investment could be adversely affected.

Pursuant to health reform legislation and related initiatives, the Centers for Medicare and Medicaid Services, or CMS, are working with various healthcare providers to develop, refine, and implement Accountable Care Organizations, or ACOs, and other innovative models of care for Medicare and Medicaid beneficiaries, including the Bundled Payments for Care Improvement Initiative, the Comprehensive Primary Care Initiative, the Duals Demonstration, and other models. The continued development and expansion of ACOs and other innovative models of care will have an uncertain impact on any future reimbursement we may receive for approved therapeutics administered by such organizations.

In addition, in recent years, the U.S. Congress has enacted various laws seeking to reduce the federal debt level and contain healthcare expenditures. For example, as a result of the Budget Control Act of 2011 and the Bipartisan Budget Act of 2015, an annual 2% reduction to Medicare payments that took effect in 2013 has been extended through 2025. These across-the-board spending cuts could adversely affect our future revenues, earnings, and cash flows.

From time to time, legislation is drafted, introduced, and passed in Congress that could significantly change the statutory provisions governing coverage, reimbursement, and marketing of products regulated by CMS or other government agencies. In addition to new legislation, CMS coverage and reimbursement policies are often revised or interpreted in ways that may significantly affect our business and our products. In particular, we expect the Administration and Congress will seek to modify, repeal, or otherwise invalidate all, or certain provisions of, U.S. healthcare legislation. A number of additional executive orders have been issued affecting, or potentially affecting, the ACA and other aspects of the healthcare market in the United States. There is a high degree of uncertainty with respect to the impact President Trump's Administration and Congress may have, and any changes will likely take time to unfold. Such reforms could have an adverse effect on anticipated revenues from therapeutic candidates we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop therapeutic candidates. However, we cannot predict the ultimate content, timing, or effect of any healthcare reform legislation or executive orders or the impact of potential legislation and executive orders on us.

The healthcare industry is heavily regulated in the U.S. at the federal, state, and local levels, and our failure to comply with applicable requirements may subject us to penalties and negatively affect our financial condition.

As a healthcare company, our operations, clinical trial activities, and interactions with healthcare providers will be subject to extensive regulation in the United States, particularly if we receive FDA approval for any of our products in the future. For example, if we receive FDA approval for a therapeutic for which reimbursement is available under a federal healthcare program, it would be subject to a variety of federal laws and regulations, including those prohibiting the filing of false or improper claims for payment by federal healthcare programs, prohibiting unlawful inducements for the referral of business reimbursable by federal healthcare programs, and requiring disclosure of certain payments or other transfers of value made to U.S.-licensed physicians and teaching hospitals. We are not able to predict how government authorities will interpret these laws. They may challenge our practices and activities under one or more of these laws. If our past or present operations are found to be in violation of any of these laws, we could be subject to civil and criminal penalties, which could hurt our business, operations, and financial condition.

Similarly, some state laws prohibit, among other offenses, knowingly and willfully executing a scheme to defraud any health care benefit program, including private payors, or 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 items or services under a health care benefit program. We may also be subject to the privacy and security provisions of HIPAA, as amended by HITECH, which restricts the use and disclosure of patient-identifiable health information, mandates the adoption of standards relating to the privacy and security of patient-identifiable health information, and requires the reporting of certain security breaches to healthcare provider customers with respect to such information. Additionally, many states have enacted similar laws imposing more stringent requirements on entities like us. Failure to comply with applicable laws and regulations could result in substantial penalties and adversely affect our financial condition and results of operations.

Our ability to obtain services, reimbursement, or funding from the federal government may be impacted by possible reductions in federal spending.

The U.S. federal budget remains in flux and could, among other things, cut Medicare payments to providers. The Medicare program is frequently mentioned as a target for spending cuts. The full impact on our business of any future cuts in Medicare or other programs is uncertain. In addition, we cannot predict any impact President Trump's administration and Congress may have on the federal budget. If federal spending is reduced, anticipated budgetary shortfalls may also impact the ability of relevant agencies such as the FDA or the National Institutes of Health to continue to function at current levels. Amounts allocated to federal grants and contracts may be reduced or eliminated. These reductions may also impact the ability of relevant agencies to timely review and approve drug research and development, manufacturing, and marketing activities, which may delay our ability to develop, market, and sell any therapeutics we may develop.

If any of our therapeutic candidates receives marketing approval and we or others later identify undesirable side effects caused by the therapeutic candidate, our ability to market and derive revenue from the therapeutic candidates could be compromised.

In the event any of our therapeutic candidates receive regulatory approval and we or others identify undesirable side effects, adverse events, or other problems caused by one of our therapeutics, any of the following adverse events could occur, which could result in the loss of significant revenue to us and materially and adversely affect our results of operations and business:

- regulatory authorities may withdraw their approval of the product or seize the product;
- we may need to recall the therapeutic or change the way the therapeutic is administered to patients;
- additional restrictions may be imposed on the marketing of the particular therapeutic or the manufacturing processes for the therapeutic or any component thereof;
- we may not be able to secure or maintain adequate coverage and reimbursement for our proprietary therapeutic candidates from government (including U.S. federal health care programs) and private payors;
- we may lose or see adverse alterations to compendia listings or treatment protocols specified by accountable care organizations;
- we may be subject to fines, restitution, or disgorgement of profits or revenues, injunctions, or the imposition of civil penalties or criminal prosecution;
- regulatory authorities may require the addition of labeling statements, such as a "black box" warning, or equivalent, or a contraindication;
- regulatory authorities may require us to implement a REMS plan, or to conduct post-marketing studies or clinical trials and surveillance to monitor the safety or efficacy of the product;
- 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;
- the therapeutic may become less competitive; and
- our reputation may suffer.

Significant developments stemming from the United Kingdom's recent referendum on membership in the European Union could have a material adverse effect on us.

In June 2016, the United Kingdom held a referendum and voted in favor of leaving the European Union. This referendum has created political and economic uncertainty, particularly in the United Kingdom and the European Union, and this uncertainty may last for years. Any business we conduct, now and in the future, in the United Kingdom, the European Union, and worldwide could be affected during this period of uncertainty, and perhaps longer, by the impact of the United Kingdom's referendum. There are many ways in which our business could be affected, only some of which we can identify as of the date of this filing.

The referendum, and the likely withdrawal of the United Kingdom from the European Union it triggers, has caused and, along with events potentially occurring in the future as a consequence of the United Kingdom's withdrawal, including the possible breakup of the United Kingdom, may continue to cause significant volatility in global financial markets, including in global currency and debt markets. This volatility could cause a slowdown in economic activity in the United

Kingdom, Europe, or globally, which could adversely affect our operating results and growth prospects. In addition, our business could be negatively affected by new trade agreements between the United Kingdom and other countries, including the United States, and by the possible imposition of trade or other regulatory barriers in the United Kingdom.

It is currently unknown how regulations affecting clinical trials, the approval of our future products, and the sale of these products will be affected by this referendum either in the United Kingdom or elsewhere in Europe.

These possible negative impacts, and others resulting from the United Kingdom's actual or threatened withdrawal from the EU, may adversely affect our operating results and growth prospects.

Risks Related to Ownership of Our Common Stock

Our stock price may be volatile and an active, liquid and orderly trading market may not develop for our common stock. As a result, stockholders may not be able to resell shares at or above their purchase price.

Although our common stock is listed on NASDAQ, an active trading market for our common stock may not develop or, if it develops, may not be sustained. The lack of an active market may impair the ability of our stockholders to sell their shares at the time they wish to sell them or at a price that they consider reasonable, which may reduce the fair market value of their shares. Further, an inactive market may also impair our ability to raise capital by selling our common stock should we determine additional funding is required.

The market price of our common stock could be subject to significant fluctuations. Market prices for securities of early-stage pharmaceutical, biotechnology, and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the market price of our common stock to fluctuate following the merger include:

- our ability to obtain regulatory approvals for product candidates, and delays or failures to obtain such approvals;
- the failure of any of our product candidates, if approved, to achieve commercial success;
- issues in manufacturing our approved products, if any, or product candidates;
- the results of current, and any future, preclinical or clinical trials of our product candidates;
- the entry into, or termination of, key agreements, including key licensing, collaboration or acquisition agreements;
- the initiation or material developments in, or conclusion of, litigation to enforce or defend any of our intellectual property rights or defend against the intellectual property rights of others;
- announcements by commercial partners or competitors of new commercial products, clinical progress (or the lack thereof), significant contracts, commercial relationships, or capital commitments;
- adverse publicity relating to our markets, including with respect to other products and potential products in such markets;
- the introduction of technological innovations or new therapies competing with our potential products;
- the loss of key employees;
- changes in estimates or recommendations by securities analysts, if any, who cover our common stock;
- general and industry-specific economic conditions potentially affecting our research and development expenditures;
- changes in the structure of health care payment systems;
- unanticipated serious safety concerns related to the use of any of our product candidates;
- failure to meet or exceed financial and development projections we may provide to the public;
- failure to meet or exceed the financial and development projections of the investment community;
- the perception of the pharmaceutical industry by the public, legislators, regulators, and the investment community;
- adverse regulatory decisions;

- disputes or other developments relating to proprietary rights, including patents, litigation matters, and our ability to obtain patent protection for our technologies;
- commencement of, or our involvement in, litigation;
- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;
- period-to-period fluctuations in our financial results; and
- the other factors described in this "Risk Factors" section.

Moreover, the stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies or the biotechnology sector. These broad market fluctuations may also adversely affect the trading price of our common stock.

In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against those companies. Such litigation, if instituted, could result in substantial costs and diversion of management attention and resources, which could significantly harm our business and reputation.

Our officers and directors, and their respective affiliates, have a controlling influence over our business affairs and may make business decisions with which stockholders disagree and which may adversely affect the value of their investment.

Our executive officers and directors together with their respective affiliates, own approximately 68% of our outstanding common stock as of December 31, 2017. As a result, if some of these persons or entities act together, they will have the ability to exercise significant influence over matters submitted to the stockholders for approval, including the election of directors, amendments to the certificate of incorporation and bylaws and the approval of any strategic transaction requiring the approval of the stockholders. These actions may be taken even if they are opposed by other stockholders. This concentration of ownership may also have the effect of delaying or preventing a change of control of our company or discouraging others from making tender offers for our shares, which could prevent our stockholders from receiving a premium for their shares. Some of these persons or entities who make up our principal stockholders may have interests different from other stockholders. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

Future sales, or the perception of future sales, of a substantial amount of our common stock could depress the trading price of our common stock.

Our stock price could decline as a result of sales of a large number of shares of our common stock or the perception that these sales could occur. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

The resale of approximately 10.3 million shares was previously prohibited as a result of lock-up agreements entered into by certain of our stockholders in connection with our merger with Alpine Immune Sciences, Inc. in July 2017; however, subject to applicable securities law restrictions, these shares became eligible for sale in the public market beginning January 21, 2018. In addition, the shares subject to outstanding options and warrants, of which options and warrants to purchase 377,550 shares and 14,039 shares, respectively, were exercisable as of December 31, 2017, and the shares reserved for future issuance under our equity incentive plans will become available for sale immediately upon the exercise of such options.

We also register the offer and sale of all shares of common stock that we may issue under our equity incentive plans. Once we register the offer and sale of shares for the holders of registration rights and option holders, they can be freely sold in the public market upon issuance, subject to any related lock-up agreements or applicable securities laws.

In addition, in the future, we may issue additional shares of common stock or other equity or debt securities convertible into common stock in connection with a financing, acquisition, litigation settlement, employee arrangements or otherwise. Any such future issuance, including any issuances pursuant to our "at the market" equity offering program under our sales agreement with Cowen, could result in substantial dilution to our existing stockholders and could cause our stock price to decline.

We will have broad discretion over the use of the proceeds to us from our "at the market" equity offering program and may apply the proceeds to uses that do not improve our operating results or the value of your securities.

We will have broad discretion to use the net proceeds to us from our "at the market" equity offering program put into place in July 2016, and investors will be relying solely on the judgment of our board of directors and management regarding the application of these proceeds. Although we expect to use the net proceeds from our "at the market" equity offering program for general corporate purposes, we have not allocated these net proceeds for specific purposes. Investors will not have the opportunity, as part of their investment decision, to assess whether the proceeds are being used appropriately. Our use of the proceeds may not improve our operating results or increase the value of the securities offered pursuant to the "at the market" equity offering program.

The JOBS Act allows us to postpone the date by which we must comply with certain laws and regulations intended to protect investors and to reduce the amount of information we provide in our reports filed with the SEC. We cannot be certain if this reduced disclosure will make our common stock less attractive to investors.

The JOBS Act is intended to reduce the regulatory burden on "emerging growth companies." As defined in the JOBS Act, we qualify as an "emerging growth company" and could remain an "emerging growth company" until as late as December 31, 2020. For so long as we are an "emerging growth company," we will, among other things:

- not be required to comply with the auditor attestation requirements of Section 404(b) of Sarbanes- Oxley;
- not be required to hold a nonbinding advisory stockholder vote on executive compensation pursuant to Section 14A of the Exchange Act;
- not be required to seek stockholder approval of any golden parachute payments not previously approved pursuant to Section 14A of the Exchange Act;
- be exempt from any rule adopted by the Public Company Accounting Oversight Board, requiring mandatory audit firm rotation or a supplemental auditor discussion and analysis; and
- be subject to reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements.

We have previously decided to opt out of an extended transition period under the JOBS Act that permits an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. Our decision is irrevocable. As a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other companies.

Furthermore, if we take advantage of some or all of the reduced disclosure requirements above, investors may find our common stock less attractive, which may result in a less active trading market for our common stock and greater stock price volatility.

If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements on a timely basis could be impaired.

We are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act and the rules and regulations of The NASDAQ Stock Market LLC. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal controls over financial reporting in our Annual Report on Form 10-K filing for that year, as required by Section 404 of the Sarbanes-Oxley Act.

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

If we are not able to comply with the requirements of Section 404 of the Sarbanes- Oxley Act, or if we are unable to maintain proper and effective internal controls, we may not be able to produce timely and accurate financial statements. If

that were to happen, the market price of our common stock could decline and we could be subject to sanctions or investigations by The NASDAQ Stock Market LLC, the SEC, or other regulatory authorities.

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

Our disclosure controls and procedures are designed to reasonably ensure that information required to be disclosed by us in reports we file or submits under the Exchange Act is accumulated and communicated to management and recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures as well as internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are and will be met. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

We will continue to incur costs and demands upon management as a result of complying with the laws and regulations affecting public companies.

We will incur significant legal, accounting, and other expenses Alpine did not incur as a private company, including costs associated with public company reporting requirements. We will also incur costs associated with corporate governance requirements, including requirements under the Sarbanes-Oxley Act, as well as new rules implemented by the SEC and The NASDAQ Stock Market LLC. Although the JOBS Act may for a limited period of time somewhat lessen the cost of complying with these additional regulatory and other requirements, we nonetheless expect that these rules and regulations will increase our legal and financial compliance costs and to make some activities more time-consuming and costly. For example, our management team will consist of the executive officers of Alpine prior to the merger, some of whom may not have previously managed and operated a public company. These executive officers and other personnel will need to devote substantial time to gaining expertise regarding operations as a public company and compliance with applicable laws and regulations. These rules and regulations may also make it difficult and expensive for us to obtain directors and officer's liability insurance. As a result, it may be more difficult for us to attract and retain qualified individuals to serve on our board of directors or as executive officers of our company, which may adversely affect investor confidence in us and could cause our business or stock price to suffer.

Anti-takeover provisions in our charter documents and under Delaware or Washington law could discourage, delay or prevent a change in control of our company, limit attempts by our stockholders to replace or remove our current management and may affect the trading price of our common stock.

Our corporate documents contain provisions that may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our stock. Among other things, our certificate of incorporation and bylaws:

- stagger the terms of our board of directors and require 66 and 2/3% stockholder voting to remove directors, who may only be removed for cause;
- provide that the authorized number of directors may be changed only by resolution of the board of directors;
- provide that all vacancies, including newly-created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- authorize our board of directors to issue "blank check" preferred stock and to determine the rights and preferences of those shares, which may be senior to our common stock, without prior stockholder approval;
- establish advance notice requirements for nominating directors and proposing matters to be voted on by stockholders at stockholders' meetings;
- prohibit our stockholders from calling a special meeting and prohibit stockholders from acting by written consent;
- require 66 and 2/3% stockholder voting to effect certain amendments to our certificate of incorporation and bylaws; and

- prohibit cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any "interested" stockholder for a period of three years following the date on which the stockholder became an "interested" stockholder. Likewise, because our principal executive offices are located in Washington, the anti-takeover provisions of the Washington Business Corporation Act may apply to us under certain circumstances now or in the future. These provisions prohibit a "target corporation" from engaging in any of a broad range of business combinations with any stockholder constituting an "acquiring person" for a period of five years following the date on which the stockholder became an "acquiring person." These provisions could discourage, delay or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing and cause us to take other corporate actions our stockholders desire.

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

Our amended and restated certificate of incorporation provides that we will indemnify our directors to the fullest extent permitted by Delaware law.

In addition, as permitted by Section 145 of the DGCL, our amended and restated bylaws and our indemnification agreements that we have entered into with our directors and officers provide that:

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

As a result, if we are required to indemnify one or more of our directors or officers, it may reduce our available funds to satisfy successful third-party claims against us, may reduce the amount of available cash and may have a material adverse effect on our business and financial condition.

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

Our amended and restated certificate of incorporation provides that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, employees or agents to us or our stockholders, any action asserting a claim arising pursuant to any provision of the

DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws or any action asserting a claim that is governed by the internal affairs doctrine, in each case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein and the claim not being one which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery or for which the Court of Chancery does not have subject matter jurisdiction. Any person purchasing or otherwise acquiring any interest in any shares of our common stock shall be deemed to have notice of and to have consented to this provision of our amended and restated certificate of incorporation. This choice of forum provision may limit our stockholders' ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, employees or agents, which may discourage such lawsuits against us and our directors, officers, employees and agents even though an action, if successful, might benefit our stockholders. Stockholders who do bring a claim in the Court of Chancery could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near Delaware. The Court of Chancery may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments or results may be more favorable to us than to our stockholders. Alternatively, if a court were to find this provision of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could have a material adverse effect on our business, financial condition or results of operations.

We do not expect to pay any dividends on our common stock for the foreseeable future.

We currently expect to retain all future earnings, if any, for future operations and expansion, and have no current plans to pay any cash dividends to holders of our common stock for the foreseeable future. Any decision to declare and pay dividends in the future will be made at the discretion of our board of directors and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions and other factors that our board of directors may deem relevant. As a result, stockholders may not receive any return on an investment in our common stock unless stockholders sell our common stock for a price greater than that which they paid for it.

If equity research analysts do not publish research or reports, or publish unfavorable research or reports, about us, our business or our market, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that equity research analysts publish about us and our business. Equity research analysts may elect not to provide research coverage of our common stock or discontinue existing research coverage, and such lack of research coverage may adversely affect the market price of our common stock. We do not have any control over the analysts or the content and opinions included in their reports. The price of our common stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of us or fails to publish reports regularly, demand for our common stock could decrease, which in turn could cause our stock price or trading volume to decline.

NASDAQ may delist our common stock from its exchange, which could limit investors' ability to make transactions in our securities and subject us to additional trading restrictions.

Our common shares are listed on NASDAQ under the trading symbol "ALPN." Our securities may fail to meet the continued listing requirements to be listed on NASDAQ. If NASDAQ delists our common shares from trading on its exchange, we could face significant material adverse consequences, including:

- significant impairment of the liquidity for our common stock, which may substantially decrease the market price of our common stock;
- a limited availability of market quotations for our securities;
- a determination that our common stock qualifies as a "penny stock" which will require brokers trading in our common stock to adhere to more stringent rules and possibly resulting in a reduced level of trading activity in the secondary trading market for our common stock;
- a limited amount of news and analyst coverage for our company; and
- a decreased ability to issue additional securities or obtain additional financing in the future.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

We lease a facility containing our research and development, laboratory, and office space, which consists of approximately 11,158 square feet located at 201 Elliott Avenue West, Seattle, Washington.

In January 2018, we entered into a lease amendment for approximately 6,184 square feet of additional office and laboratory space adjacent to our existing leased premises in Seattle, Washington.

The lease expires on December 31, 2019 and has two options to extend the lease term with each option enabling us to extend the lease term by twelve months.

Item 3. Legal Proceedings.

We are not engaged in any material legal proceedings. From time to time, we may become involved in litigation relating to claims arising from the ordinary course of business. We believe that there are no claims or actions pending against us currently, the ultimate disposition of which would have a material adverse effect on our consolidated results of operation, financial condition or cash flows.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information

Our common stock is traded on The NASDAQ Global Market under the symbol "ALPN." From June 17, 2015 through July 24, 2017, our common stock was traded under the symbol "NVLS." On July 24, 2017, in connection with the business combination of Nivalis Therapeutics, Inc. and Alpine Immune Sciences, Inc., we completed a 1-for-4 reverse stock split. Commencing on July 25, 2017, our common stock began trading on The NASDAQ Global Market under the symbol "ALPN." The share-related information presented in this Annual Report on Form 10-K, including the high and low sales prices for our common stock as reported on The NASDAQ Global Market and set forth in the table below, has been adjusted to reflect the reverse stock split.

	HIGH	LOW
Year Ended December 31, 2017		
Fourth Quarter	$ 12.87	$ 9.62
Third Quarter	$ 11.95	$ 7.20
Second Quarter	$ 12.16	$ 8.20
First Quarter	$ 14.52	$ 8.24
Year Ended December 31, 2016		
Fourth Quarter	$ 32.44	$ 8.00
Third Quarter	$ 37.40	$ 16.84
Second Quarter	$ 20.98	$ 15.16
First Quarter	$ 30.72	$ 14.72

Holders

As of March 20, 2018, we have approximately 27 stockholders of record for our common stock, which excludes stockholders whose shares were held in nominee or street name accounts through brokers.

Dividends

We have never declared or paid any cash dividends on our capital stock and do not anticipate paying any cash dividends in the foreseeable future. Payment of cash dividends, if any, in the future will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects and other factors our board of directors may deem relevant.

Stock Performance Graph

As a "smaller reporting company," as defined by Rule 12b-2 of the Exchange Act, and pursuant to Instruction 6 to Item 201(e) of Regulation S-K we are not required to provide the stock performance graph.

Recent Sales of Unregistered Securities

None

Use of Proceeds from Initial Public Offering

Not applicable.

Issuer Purchases of Equity Securities

The following table summarizes stock repurchases during the three months ended December 31, 2017:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Minimum Number of Shares that May be Purchased Under the Plans or Programs
December 1, 2017 to December 31, 2017 (1)	50,467	$ 0.00201	—	—
Total	50,467	$ 0.00201	—	—

(1) On December 21, 2017, in connection with the voluntary departure of one of our former employees and pursuant to the terms of a common stock purchase agreement, we exercised an option to repurchase 50,467 shares of our common stock acquired by our former employee that had not yet vested pursuant to the terms of the common stock purchase agreement. The price per share paid by us was equal to the original purchase price per share paid by our former employee.

Item 6. Selected Financial Data.

Statement of Operations Data:	December 31, 2017	2016	2015
	(in thousands, except share and per share amounts)		
Collaboration revenue	$ 1,731	$ 2,950	$ 492
Operating expenses:			
Research and development	10,626	2,989	422
General and administrative	6,079	1,149	441
Total operating expenses	16,705	4,138	863
Loss from operations	(14,974)	(1,188)	(371)
Other income (expense)			
Bargain purchase gain (1)	6,601	—	—
Interest expense	(152)	—	—
Interest and other income	542	22	2
Income (loss) before taxes	(7,983)	(1,166)	(369)
Income tax benefit (expense)	200	(66)	—
Basic and diluted net loss attributable to common stockholders	$ (7,783)	$ (1,232)	$ (369)
Basic and diluted net loss per share applicable to common stockholders	$ (1.20)	$ (2.18)	$ (0.74)
Weighted-average shares used to compute basic and diluted net loss per share attributable to common stockholders	6,481,665	564,816	496,900

(1) The bargain purchase gain relates solely to the excess of the estimated fair values of net assets acquired over the acquisition consideration paid for Nivalis.

Balance Sheet Data:	As of December 31, 2017	2016	2015
	(in thousands)		
Cash and cash equivalents	$ 8,000	$ 11,819	$ 5,423
Short-term investments	73,240	—	—
Working capital	80,653	9,451	2,260
Total assets	85,222	12,595	5,439
Total liabilities	6,305	2,517	5,181
Convertible preferred stock	—	11,535	610
Accumulated deficit	(9,384)	(1,601)	(369)
Total stockholders' equity (deficit)	78,917	(1,457)	(352)

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

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the related notes appearing elsewhere in this Annual Report on Form 10-K. In addition to historical information, some of the information contained in this discussion and analysis or set forth elsewhere in this report, including information with respect to our plans and strategy for our business, future financial performance, expense levels and liquidity sources, includes forward-looking statements that involve risks and uncertainties. You should read the "Risk Factors" section of this report 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 development-stage immunotherapy company focused on developing treatments for autoimmune/inflammatory diseases and cancer. Our proprietary scientific platform produces Variant Immunoglobulin Domains ("vIgDs"), using a process known as directed evolution, to create therapeutics potentially capable of modulating the human immune system.

Our goal is to create modern therapies targeting the immune synapse, using our directed-evolution based discovery platform to potentially treat patients with serious conditions such as cancer and inflammatory diseases. To achieve our goal, we currently plan to:

- advance our lead program ALPN-101 for the treatment of autoimmune/inflammatory diseases to clinical trials;
- advance our oncology program ALPN-202 for the treatment of cancer to clinical trials;
- develop our inhibitory (checkpoint) receptor agonist and V-mAb programs; and
- maximize the value of our pipeline and platform via partnering activities.

Our operations to date have been limited to business planning, raising capital, developing our platform technology, identifying potential immunotherapy candidates, and other research and development activities. To date, we have financed operations primarily through private placements of convertible preferred stock, funds received from a license and research agreement, debt, and assets acquired upon the close of our merger with Nivalis Therapeutics Inc. ("Nivalis"). We do not have any products approved for sale and have not generated any product sales. Since inception and through December 31, 2017, we have raised an aggregate of $103.8 million to fund operations, of which $49.2 million was from the sale of convertible preferred stock, $5.5 million was through a license and research agreement, $5.0 million obtained from a long-term loan, and $44.1 million in cash, cash equivalents, and marketable securities acquired through the merger with Nivalis. As of December 31, 2017, we had cash, cash equivalents, and short-term investments totaling $81.2 million.

Our net loss was $7.8 million, $1.2 million and $0.4 million for the years ended December 31, 2017, 2016 and 2015, respectively. We expect to continue incurring significant expenses and operating losses for at least the next several years as we:

- initiate and complete clinical trials for product candidates, including ALPN-101, a dual ICOS/CD28 antagonist program targeting autoimmune/inflammatory disorders and ALPN-202, a CD80 vIgD-Fc, or multi PD-1 inhibitor and CD28 costimulatory vIgD targeting cancer;
- contract to manufacture and perform additional process development for our product candidates;
- continue research and development efforts to build our pipeline beyond the current product candidates;
- maintain, expand, and protect our intellectual property portfolio;
- hire additional clinical, quality control, scientific, and management personnel; and
- add operational and financial personnel to support our product development efforts and operational support applicable to operating as a public company.

We do not expect to generate product revenue unless and until we successfully complete development of, obtain marketing approval for and commercialize our product candidates, either alone or in collaboration with third parties. We expect these activities will take a number of years and our success in these efforts is subject to significant uncertainty. Accordingly, we will need to raise additional capital prior to the regulatory approval and commercialization of any of our

product candidates. Until such time, if ever, as we can generate substantial product revenues, we expect to finance our operating activities through public equity or debt financings, collaborations or licenses, capital lease transactions, or other available financing transactions. However, additional capital may not be available on reasonable terms, if at all, and if we raise additional funds through the issuance of additional equity or debt securities, it could result in dilution to our existing stockholders and increased fixed payment obligations.

Business Combination with Nivalis

On April 18, 2017, we entered into a merger agreement (the "Merger Agreement") with Nivalis, a public biotechnology company. Upon the closing of the merger, (1) a wholly-owned subsidiary of Nivalis merged with and into Alpine, with Alpine (renamed as "AIS Operating Co., Inc.") remaining as the surviving entity; and (2) Nivalis was renamed as "Alpine Immune Sciences, Inc.". On July 24, 2017, the business combination of Alpine and Nivalis was completed. Under the terms of the Merger Agreement, Alpine's preexisting stockholders, warrantholders and optionholders received approximately 76% of the fully-diluted shares of common stock of the combined organization in exchange for the transfer of all of Alpine's common stock. This transaction was consummated to provide us with increased access to sources of capital and a broader range of investors to support the clinical development of our products. The acquired assets and liabilities of Nivalis are included in our consolidated balance sheet as of December 31, 2017 and Nivalis' results of operations and cash flows for the period from July 25, 2017 through December 31, 2017 are included in our consolidated statement of comprehensive income and cash flows for the period from July 1, 2017 through December 31, 2017. See notes to the consolidated financial statements included in this Form 10-K for further information regarding the business combination.

Financial Overview

Revenue

Collaboration and Licensing Revenue

We derive all our revenue from our License and Research Agreement (the "Collaboration Agreement"), with Kite Pharma, Inc. ("Kite"). In October 2015, we entered into the Collaboration Agreement providing Kite with access to two transmembrane immunomodulatory protein ("TIP") programs for use in Kite's engineered cellular therapy programs. We received $5.5 million in upfront cash and are eligible to receive up to $530.0 million upon successful achievement of pre-specified research, clinical, and regulatory milestones in addition to royalties on any products containing our TIPs. In the collaboration, we provide the TIPs and perform *in vitro* testing, while Kite is responsible for *in vivo* testing, manufacturing, and clinical trials. Kite will receive an exclusive, worldwide license to research, develop, and commercialize engineered autologous T cell therapies incorporating two TIP programs coming from our platform.

On October 20, 2017, we entered into an amendment (the "Amendment") with Kite to extend the research term of the Collaboration Agreement. Under the Amendment, we are eligible to receive an additional $450,000 research support payment from Kite in two tranches (instead of a single tranche as previously contemplated by the Collaboration Agreement). The Amendment also amended and restated the original research plan. We have adjusted our expected recognition period of the remaining deferred upfront payments over the expected life of the amended research plan and will recognize the potential $450,000 in additional research support only when the stated milestones have been completed.

We have recognized $5.2 million in revenue from inception through December 31, 2017 related to the Collaboration Agreement. We may generate revenue in the future from milestone payments made pursuant to the Collaboration Agreement, or from payments from future license or collaboration agreements, product sales, or government contracts and grants. We expect any revenue we generate will fluctuate from quarter to quarter.

Research and Development Expenses

We focus our resources on research and development activities, including the conduct of preclinical studies and product development and expense such costs as they are incurred. Our research and development expenses consist of:

- employee-related expenses, including salaries, benefits, taxes, travel, and stock-based compensation expense for personnel in research and development functions;
- expenses related to process development and production of product candidates paid to contract manufacturing organizations;

- costs associated with preclinical activities and regulatory operations, including the cost of acquiring, developing, and manufacturing research material; and
- allocation of facilities, depreciation, and amortization of laboratory equipment and other expenses.

We incurred $10.6 million, $3.0 million and $0.4 million in research and development expenses for the years ended December 31, 2017, 2016, and 2015, respectively. We plan to increase our research and development activities for the foreseeable future as we continue to develop our platform and product candidates.

The successful development of our platform and product candidates is highly uncertain. At this time, we cannot reasonably estimate the nature, timing, or costs of the efforts necessary to finish developing any of our product candidates or the period in which material net cash, if any, from these product candidates may commence. This is due to the numerous risks and uncertainties associated with developing therapeutics, including the uncertainty of:

- the scope, rate of progress, expense, and results of planned clinical trials that we may conduct;
- the scope, rate of progress, and expense of process development and manufacturing;
- preclinical and other research activities; and
- the timing of regulatory approvals.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and related costs for employees in executive, business development, and finance functions. Other significant general and administrative expenses include professional fees for accounting and legal services, expenses associated with obtaining and maintaining patents and other intellectual property, and allocation of facilities costs.

We expect general and administrative expenses will increase as we expand infrastructure to support operating as a public company. These increases will include increased costs for director and officer liability insurance, costs related to the hiring of additional personnel, and increased fees for directors, outside consultants, lawyers, and accountants. We expect to incur significant costs to comply with corporate governance, internal controls, and similar requirements applicable to public companies.

Bargain Purchase Gain

As Alpine was the accounting acquirer in the Merger Agreement, we allocated the purchase price to the acquired tangible and intangible assets and assumed liabilities of Nivalis based on their estimated fair values as of the acquisition date. The excess of the estimated fair values of net assets acquired over the acquisition consideration paid was recorded as a bargain purchase gain in the consolidated statements of operations and comprehensive income (loss). The determination of the fair values of the assets acquired and liabilities assumed requires significant judgment, including third party valuation estimates relating to the value of the acquired in-process research and development asset (“IPR&D”).

Interest Expense

Interest expense consists of accrued interest and the amortization of the debt discount associated with our $5.0 million term loan.

Interest and Other Income

Interest income consists of interest earned on our cash, cash equivalents, and short-term investments.

Income Tax Expense

We had federal taxable income in 2016, due to acceleration of our deferred revenue balance under Rev. Proc. 2004-34. Consequently, we have recorded current federal and state income tax payable for the year ended December 31, 2016.

Results of Operations

Comparison of Years Ended December 31, 2017 and 2016

The following table summarizes our results of operations for the years ended December 31, 2017 and 2016 (in thousands):

	Years Ended December 31,		Increase/ (Decrease)
	2017	2016	
Collaboration revenue	$ 1,731	$ 2,950	$ (1,219)
Operating expenses:			
Research and development	10,626	2,989	7,637
General and administrative	6,079	1,149	4,930
Total operating expenses	16,705	4,138	12,567
Loss from operations	(14,974)	(1,188)	(13,786)
Bargain purchase gain	6,601	—	6,601
Interest expense	(152)	—	(152)
Interest and other income	542	22	520
Loss before taxes	(7,983)	(1,166)	(6,817)
Income tax benefit (expense)	200	(66)	266
Basic and diluted net income (loss) attributable to common stockholders	$ (7,783)	$ (1,232)	$ (6,551)

Revenues

The $1.2 million decrease in revenues was primarily attributable to the timing of revenue recognized under our Collaboration Agreement with Kite. Under the terms of the Collaboration Agreement, we received upfront payments of $5.5 million, which were initially recorded as deferred revenue and expensed over the period of the research term. During the current period, the expected research term was extended pursuant to the Amendment.

Research and Development Expenses

The $7.6 million increase in research and development expenses was primarily attributable to an increase of $3.9 million in direct research, contract manufacturing, and process development activities to support ALPN-101, an increase of $3.1 million in personnel-related expenses as a result of growth in headcount to support ongoing discovery and development programs, and an increase of $0.6 million in allocated overhead and facilities.

General and Administrative Expenses

The $4.9 million increase in general and administrative expenses was primarily attributable to a $2.8 million increase in professional and legal service fees to support the merger and operating as a public company, a $2.0 million increase in personnel-related expenses primarily related to an increase in administrative headcount, and a $0.1 million increase in insurance and facility costs to support the growth and expansion of our business.

Bargain Purchase Gain

The bargain purchase gain relates solely to the excess of the estimated fair values of net assets acquired over the acquisition consideration paid for Nivalis.

Comparison of Years Ended December 31, 2016 and 2015

The following table summarizes our results of operations for the years ended December 31, 2016 and 2015 (in thousands):

	Years Ended December 31,		Increase/ (Decrease)
	2016	2015	
Collaboration revenue	$ 2,950	$ 492	$ 2,458
Operating expenses:			
Research and development	2,989	422	2,567
General and administrative	1,149	441	708
Total operating expenses	4,138	863	3,275
Loss from operations	(1,188)	(371)	(817)
Bargain purchase gain	—	—	—
Interest expense	—	—	—
Interest and other income	22	2	20
Loss before taxes	(1,166)	(369)	(797)
Income tax benefit (expense)	(66)	—	(66)
Basic and diluted net income (loss) attributable to common stockholders	$ (1,232)	$ (369)	$ (863)

Revenues

The $2.5 million increase in revenue was attributable to a full year of revenue recognized under the collaboration with Kite as opposed to only three months in 2015 as the agreement was entered into in October 2015.

Research and Development Expenses

The $2.6 million increase was primarily attributable to an increase of $1.6 million in personnel-related expenses as a result of growth in headcount to support ongoing research and development programs, $0.7 million in direct laboratory and support costs and an increase of $0.3 million in allocated overhead for facility and equipment.

General and Administrative Expenses

The $0.7 million increase was primarily attributable to the $0.3 million increase in professional service fees to support our growth in headcount to support ongoing operations, a $0.3 million increase in personnel-related expenses, primarily related to an increase in administrative headcount to support the growth and expansion of our business and $0.1 million increase for facility costs.

Income Tax Expense

We had a net loss before tax of $1.2 million and $0.4 million for 2016 and 2015, respectively. We had taxable income of $0.4 million in 2016 due to acceleration of our deferred revenue balance under Rev. Proc. 2004-34. Consequently, we recorded current federal and state income tax payable for the year-ended December 31, 2016 of $0.1 million.

Liquidity and Capital Resources

As of December 31, 2017, we had cash, cash equivalents, and short-term investment totaling $81.2 million. We have raised an aggregate of $103.8 million to fund operations, of which $49.2 million was from the sale of convertible preferred stock, $5.5 million was through a license and research agreement, $5.0 million advanced from a long-term loan, and $44.1 million in cash, cash equivalents, and marketable securities acquired through the merger with Nivalis. In addition to our existing cash, cash equivalents, and marketable securities, we are eligible to receive research and development funding and to earn milestone and other contingent payments for the achievement of defined collaboration objectives and certain development and regulatory milestones and royalty payments under the Collaboration Agreement. Our ability to earn these milestone and contingent payments and the timing of achieving these milestones is primarily dependent upon the outcome Kite’s research and development activities and is uncertain.

We have incurred operating losses since inception. We expect to continue to incur significant expenses and operating losses for the foreseeable future as we continue our research and preclinical and clinical development of our product candidates; expand the scope of our current studies for our product candidates; initiate additional preclinical, clinical or other

studies for our product candidates, including under any collaboration agreements; change or add additional manufacturers or suppliers; seek regulatory and marketing approvals for any of our product candidates that successfully complete clinical studies; seek to identify, evaluate and validate additional product candidates; acquire or in-license other product candidates and technologies; maintain, protect and expand our intellectual property portfolio; attract and retain skilled personnel; and experience any delays or encounter issues with any of the above.

Until such time as we can generate substantial product revenue, if ever, we expect to finance our cash needs through a combination equity or debt financings and collaboration agreements. Except for any obligations of our collaborator to make milestone payments under our agreement with them, we do not have any committed external sources of capital. To the extent that we raise additional capital through the future sale of equity or debt, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our existing common stockholders. If we raise additional funds through collaboration agreements in the future, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our future capital requirements are difficult to forecast and will depend on many factors, including:

- the number and characteristics of the future product candidates we pursue either from our internal research efforts or through acquiring or in-licensing other product candidates or technologies;
- the scope, progress, results and costs of independently researching and developing any of our future product candidates, including conducting preclinical research and clinical trials;
- whether our existing collaboration generates substantial milestone payments and, ultimately, royalties on future approved products for us;
- the timing of, and the costs involved in, obtaining regulatory approvals for any future product candidates we develop independently;
- the cost of future commercialization activities, if any;
- the cost of manufacturing our future product candidates and products, if any;
- our ability to maintain our existing collaboration and to establish new collaborations, licensing or other arrangements and the financial terms of such arrangements;
- the costs of preparing, filing, prosecuting, maintaining, defending and enforcing patents, including litigation costs and the outcome of such litigation; and
- the timing, receipt and amount of sales of, or royalties on, our current or future collaborators' product candidates, and our future products, if any.

Based on our research and development plans and our timing expectations related to the progress of our programs, we expect that our existing cash, cash equivalents and marketable securities as of the date of this report and research funding that we expect to receive under our existing collaboration, will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months. We have based this estimate on assumptions that may prove to be wrong, and we could use our capital resources sooner than we expect. Additionally, the process of testing drug candidates in preclinical and clinical studies is costly, and the timing of progress in these studies remains uncertain.

Financing Agreements

Prior to execution and delivery of the Merger Agreement certain holders of our Series A-1 convertible preferred stock purchased shares of our Series A-1 convertible preferred stock. In March 2017, we issued and sold 707,330 shares of Series A convertible preferred stock and received a total of $4.0 million. In April 2017, we issued and sold 2,947,211 shares of our Series A-1 convertible preferred stock for an aggregate of $16.7 million in net proceeds. In addition, contemporaneously with the close of the Merger certain existing stockholders of Alpine purchased 1,335,118 additional shares of Alpine's capital stock for an aggregate of $17.0 million in net proceeds.

In July 2016, we entered into a sales agreement with a sales agent to sell shares of our common stock through an "at the market" equity offering program for up to $30.0 million in gross cash proceeds. The sales agreement allows us to set the

parameters for the sale of shares, including the number of shares to be issued, the time period during which sales are requested to be made, limits on the number of shares that may be sold in any one trading day and a minimum price below which sales may not be made. Under the terms of the sales agreement, commission expenses to the sales agent will be 3% of the gross sales price per share sold through the sales agent. The sales agreement shall automatically terminate upon the issuance and sale of placement shares equaling sales proceeds of $30.0 million and may be terminated earlier by either us, or the sales agent upon 10 days' notice. As of December 31, 2017, approximately 5,000 shares of common stock (as adjusted to reflect the impact of our one-for-four reverse stock split in July 2017), have been sold at an average sales price of $32.00 per share (as adjusted to reflect the impact of our one-for-four reverse stock split in July 2017) under the sales agreement, net of offering costs of approximately $140,000. Although the sales agreement is for sales of our common stock of up to $30.0 million in the aggregate, the amount of shares that we may sell from time to time may be limited due to our status as a smaller reporting company and the market value of our voting and non-voting common equity held by non-affiliates.

Long-Term Financing

In December 2016, we entered into a term loan agreement with Silicon Valley Bank pursuant to which up to $5.0 million could be borrowed. On June 30, 2017, we drew down a term loan of $5.0 million pursuant to the agreement. The loan has an interest-only period expiring on July 1, 2018, at which point we will make thirty consecutive equal monthly payments of principal (each in an amount that will fully amortize the loan), plus accrued interest. Interest accrues at a floating per annum rate equal to the lender's prime rate minus 1.75%. As a condition to the loan, we agreed to pay a final payment fee of 7.5%, or $375,000, upon repayment of the loan. The final payment fee was recorded in long-term debt with an offsetting reduction in long-term debt and was accounted for as a debt discount.

Pursuant to the loan agreement we have pledged substantially all of our assets, excluding intellectual property, as collateral. The obligations under the loan agreement are subject to acceleration upon the occurrence of specified events of default, including a material adverse change in our business, operations or financial or other condition. The term loan agreement contains customary conditions to borrowings, events of default and negative covenants, including covenants that could limit our ability to, among other things, incur additional indebtedness, liens or other encumbrances, make dividends or other distributions; buy, sell or transfer assets; engage in any new line of business; and enter into certain transactions with affiliates. We were in compliance with our covenants as of December 31, 2017.

Cash Flows

The following is a summary of our cash flows (in thousands):

	Years Ended December 31,		
	2017	2016	2015
Net cash used in operating activities	$ (16,572)	$ (3,797)	$ 4,820
Net cash used in investing activities	(29,803)	(782)	(7)
Net cash provided by financing activities	42,688	10,975	610

Net Cash (Used in) Provided by Operating Activities:

Net cash used in operating activities was $16.6 million for the year ended December 31, 2017 compared to $3.8 million for the year ended December 31, 2016. The increase in cash used in operations in 2017 as compared to the 2016 period was primarily attributable to personnel-related expenses as a result of increased headcount, increased direct contract research costs to support product development, and cash used to support the merger.

Net cash used in operating activities was $3.8 million for the year ended December 31, 2016, compared to net cash provided by operating activities of $4.8 million for the year ended December 31, 2015. The increase in cash used in operating activities from 2015 to 2016 was primarily due to an increase in research and development personnel-related expenses as a result of growth to support product development. For the year ended December 31, 2015, cash provided by the Collaboration was $5.5 million and was offset by $0.9 million in operating expenses.

Net Cash Used in Investing Activities:

Net cash used in investing activities was $29.8 million for the year ended December 31, 2017 and consisted primarily of consideration acquired in the merger, purchases and sales of short-term investments in U.S. Treasury securities, commercial paper, and corporate debt securities, and purchases of property and equipment. Net cash used in investing

activities was $0.8 million during the year ended December 31, 2016, and primarily related to the purchase of property and equipment to build out our laboratory at our Seattle facility.

Net cash used in investing activities was $0.8 million for the year ended December 31, 2016 and was negligible for the year ended December 31, 2015. Net cash used in investing activities for the year ended December 31, 2016 primarily related to the purchase of property and equipment to build out our laboratory at our current Seattle facility that we moved into in 2016.

Net Cash Provided by Financing Activities:

Net cash provided by financing activities was $42.7 million for the year ended December 31, 2017 and consisted primarily of $37.7 million in proceeds from the sale of preferred stock and $5.0 million from the advance of a long-term loan. Net cash provided by financing activities was $11.0 million for the year ended December 31, 2016 and consisted primarily of the sale of preferred stock.

Net cash provided by financing activities was $11.0 million for the year ended December 31, 2016, compared to $0.6 million for the year ended December 31, 2015. Net cash provided by financing activities for the periods presented primarily related to the sale of convertible preferred stock. In 2016, we sold shares of Series Seed convertible preferred stock for proceeds of $0.6 million and shares of Series A-1 convertible preferred stock for net proceeds of $10.3 million. In 2015, we sold shares of Series Seed convertible preferred stock for proceeds of $0.6 million.

Contractual Obligations and Contingent Liabilities

The following table summarizes our contractual obligations at December 31, 2017 (in thousands):

	Total	Less than one year	1 to 3 years	3 to 5 years	More than 5 years
Operating leases	$ 1,211	$ 605	$ 606	$ —	$ —
Notes payable (principal and interest)	5,613	1,131	4,482	—	—
Total	$ 6,824	$ 1,736	$ 5,088	$ —	$ —

Operating leases

Operating leases represent future minimum lease payments under non-cancelable operating leases in effect as of December 31, 2017, including the remaining lease payments for our headquarters in Seattle. The minimum lease payments above do not include real estate taxes or other leasehold-related charges. In January 2018, we entered into a lease amendment for approximately 6,184 square feet of additional office and laboratory space adjacent to our existing leased premises in Seattle, Washington. The lease expires on December 31, 2019 and has two options to extend the lease term with each option enabling us to extend the lease term by twelve months. The annual base rent due under the lease is $295,000 for the first year and will increase by 3.0% each year thereafter. Lease payments in connection with this amendment are not included in the table above.

Inflation

We do not believe that inflation has had a material effect on our business, financial condition or results of operations in the last three fiscal years.

Off-Balance Sheet Arrangements

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

JOBS Act

On April 5, 2012, the JOBS Act was enacted. Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as

amended, or the Securities Act, for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

Critical Accounting Policies and Estimates

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

While our significant accounting policies are more fully described in Note 2 to our consolidated financial statements appearing at the end of this report, we believe that the following accounting policies are the most critical to fully understanding and evaluating our financial condition and results of operations.

Business Combination

We use our best estimates and assumptions to accurately assign fair value to the tangible and intangible assets acquired and liabilities assumed at the acquisition date. Our estimates are inherently uncertain and subject to refinement. During the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the fair value of these tangible and intangible assets acquired and liabilities assumed, with the corresponding offset to bargain purchase gain. In addition, uncertain tax positions and tax-related valuation allowances are initially established in connection with a business combination as of the acquisition date. Our management collects new information and reevaluates these estimates and assumptions quarterly and records any adjustments to our preliminary estimates to bargain purchase gain during the measurement period. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statements of operations and comprehensive income (loss).

We allocated the preliminary purchase price to the acquired tangible and intangible assets and assumed liabilities of Nivalis based on their estimated fair values as of the acquisition date. The fair value of our identifiable intangible asset is based on detailed valuations using information and assumptions provided by management. The allocation of the purchase consideration to the assets acquired and liabilities assumed in our financial statements was finalized as of December 31, 2017.

Intangible Asset

Our intangible asset is our indefinite-life GSNOR inhibitor in-process research and development asset ("IPR&D") acquired from Nivalis. The IPR&D represents the processes, expertise, and technology employed in the development of S-nitrosoglutathione reductase ("GSNOR") inhibitors and Nivalis' lead product candidate, cavosonstat. The IPR&D represents the estimated fair value as of the acquisition date of substantive in-process projects that have not reached technological feasibility. The primary basis for determining technological feasibility of these projects is obtaining regulatory approval. The valuation of IPR&D is determined using a discounted cash flow method. In determining the value of IPR&D, management considers, among other factors, the stage of completion of the projects, the technological feasibility of the projects, whether the projects have an alternative future use, and the estimated residual cash flows that could be generated from the various projects and technologies over their respective projected economic lives. The discount rate used is determined at the time of acquisition and includes a rate of return which accounts for the time value of money, as well as risk factors reflecting the economic risk that the projected cash flows may not be realized

We review our IPR&D at least annually for possible impairment. IPR&D is reviewed for possible impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of the IPR&D below their carrying values. We test our IPR&D each year on October 1. Our IPR&D asset totaled $1.5 million at December 31, 2017.

Accrued Liabilities

As part of the process of preparing our financial statements, we are required to estimate accruals for professional services and research and development expenses. This process involves reviewing contracts and vendor agreements, and communicating with applicable personnel to identify services that have been performed on our behalf. We estimate the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. We estimate accrued liabilities as of each balance sheet date based on known facts and circumstances.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, we may report amounts that are too high or too low in any particular period. To date, we have not experienced any significant adjustments to our estimates.

Revenue Recognition

We derive our revenue from collaboration and licensing agreements. We recognize revenue when each of the following four criteria are met: (1) persuasive evidence of an arrangement exists; (2) products have been delivered or services have been rendered; (3) the sales price is fixed or determinable; and (4) collectability is reasonably assured.

We recognize revenue under the Collaboration Agreement in accordance with the guidance on multiple element arrangements. Multiple elements or deliverables may include (1) grants of, or options to obtain, intellectual property licenses; (2) research and development services; and/or (3) manufacturing or supply services. Payments typically received under these arrangements include one or more of the following: non-refundable upfront license fees, option exercise fees, payment for research and/or development efforts, amounts due upon the achievement of specified objectives, and/or royalties on future product sales.

The evaluation of multiple-element arrangements requires management to make judgments about (1) the identification of deliverables; (2) whether such deliverables are separable from other aspects of the contractual relationship; (3) the estimated selling price of each deliverable; and (4) the expected period of performance for each deliverable. To determine the units of accounting under a multiple-element arrangement, management evaluates certain separation criteria, including whether the deliverables have stand-alone value, based on the relevant facts and circumstances for each arrangement. Management then estimates the selling price for each unit of accounting and allocates the arrangement consideration to each unit using the relative selling price method. The allocated consideration for each unit of accounting is recognized based on the method most appropriate for that unit of account and in accordance with the revenue recognition criteria detailed above. If there are deliverables in an arrangement that are not separable from other aspects of the contractual relationship, they are treated as a combined unit of accounting, with the allocated revenue for the combined unit recognized in a manner consistent with the revenue recognition criteria applicable to the final deliverable in the combined unit. Payments received prior to satisfying the relevant revenue recognition criteria are recorded as deferred revenue in the accompanying consolidated balance sheets and recognized as revenue when the related revenue recognition criteria are met.

The Collaboration Agreement provides for non-refundable milestone payments. We recognize revenue that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. A milestone is considered substantive when the consideration payable to us for such milestone (1) is consistent with our performance necessary to achieve the milestone or the increase in value to the collaboration resulting from our performance; (2) relates solely to our past performance; and (3) is reasonable relative to all of the other deliverables and payments within the arrangement. In making this assessment, we consider all facts and circumstances relevant to the arrangement, including factors such as the scientific, regulatory, commercial, and other risks that must be overcome to achieve the milestone, the level of effort and investment required to achieve the milestone and whether any portion of the milestone consideration is related to future performance or deliverables.

We will periodically review the estimated performance periods under the Collaboration Agreement which provides for non-refundable upfront payments and fees. We will adjust the periods over which revenue should be recognized when appropriate to reflect changes in assumptions relating to the estimated performance periods. We could accelerate revenue recognition in the event of early termination of programs or if our expectations change. Alternatively, we could decelerate revenue recognition if programs are extended or delayed. While such changes to our estimates have no impact on our reported cash flows, the timing of revenue recorded in future periods could be materially impacted.

Stock-based Compensation

We account for all stock-based compensation granted to employees and non-employees using a fair value method. Stock-based compensation awarded to employees and non-employees is measured at the grant date fair value for stock option grants. Stock-based compensation to employees is recognized over the requisite service period of the awards, usually the vesting period, on a straight-line basis. Stock-based compensation awarded to non-employees is revalued over its vesting period using a Black-Sholes option pricing model. We recognize forfeiture of awards as they occur rather than estimating the expected forfeiture rate.

We use the Black-Scholes option pricing model to estimate the fair value of stock option grants. The Black-Scholes option pricing model relies on a number of key assumptions to calculate estimated fair value, including the risk-free interest rate, expected life, expected volatility, and expected dividend yield. For risk-free interest rate, we use the zero-coupon U.S. Treasury instruments security rate with a term equal to the expected life of the option. We use the "simplified method" for options to determine the expected term of stock option granted to employees. Under this approach, the weighted-average expected life is presumed to be the average of the vesting term and the contractual term of the option. For expected volatility, we analyzed the stock price volatility of companies at a similar stage of development to estimate expected volatility of our stock price. Our assumed dividend yield of zero as we have never paid cash dividends and have no present intention to pay cash dividends.

If factors change and we employ different assumptions for estimating stock-based compensation expense in future periods, or if we decide to use a different valuation model, the stock-based compensation expense we recognize in future periods may differ significantly from what we have recorded in the current period and could materially affect our financial statements.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers, as amended, which amends the guidance for revenue recognition to replace numerous industry specific requirements. ASU 2014-09, as amended, implements a five-step process for customer contract revenue recognition focusing on transfer of control, as opposed to transfer of risk and rewards. ASU 2014-09, as amended, also requires enhanced disclosures regarding the nature, amount, timing, and uncertainty of revenues and cash flows from contracts with customers. Other major provisions include ensuring the time value of money is considered in the transaction price, and allowing estimates of variable consideration to be recognized before contingencies are resolved in certain circumstances. ASU 2014-09, as amended, is effective for reporting periods beginning after December 15, 2017. Early adoption is permitted, but not before December 15, 2016. Entities can transition to the standard either retrospectively or as a cumulative-effect adjustment as of the date of adoption. We adopted this new standard effective January 1, 2018, on a modified retrospective basis, which requires the cumulative effect of the adoption to be recognized as an adjustment to opening retained earnings in the first period of adoption. The adoption of ASU No. 2014-09 did not have a material impact on recorded amounts when applied to the opening balance sheet as of January 1, 2018, and is not expected to have a material impact on the amount or timing of the future amounts of net income. Additional impacts could still result when the standard is first applied to revenue transactions during the first quarter of 2018.

In February 2016, the FASB issued ASU No. 2016-02, Leases. ASU 2016-02 requires a lessee to separate the lease components from the non-lease components in a contract and recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. It also aligns lease accounting for lessors with the revenue recognition guidance in ASU 2014-09. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and is to be applied at the beginning of the earliest period presented using a modified retrospective approach. We are continuing to evaluate the effect the standard will have on our financial statements and related disclosures.

In August 2016, the FASB issued ASU No. 2016-15 which provides new guidance on the classification of certain cash receipts and payments in the statement of cash flows. The new guidance is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. We will be required to adopt the new guidance beginning with the first fiscal quarter of 2018; early adoption is permitted. We are currently assessing the impact the new guidance will have on our consolidated statements of cash flows.

In May 2017, the FASB issued ASU No. 2017-09 to provide clarity and reduce both diversity in practice and cost and complexity when applying the guidance in Compensation - Stock Compensation (Topic 718) about a change to the terms and conditions of a share-based payment award. The amendments in this update provide guidance about which changes to the

terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. The amendments in this update are effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted, and applied prospectively to modifications occurring on or after the adoption date. We do not expect the adoption of this standard to have a material impact on our financial statements. For the year ended December 31, 2017, there were no modifications to the terms or conditions of a share-based payment award.

Recently Adopted Accounting Pronouncements

In August 2014, the FASB issued ASU No.2014-15, Disclosures of Uncertainties about an Entity's Ability to Continue as a Going Concern. Under the new guidance, management is required to assess an entity's ability to continue as a going concern and to provide related footnote disclosures in certain circumstances. The provisions of this standard are effective for annual periods ending after December 31, 2016, and for annual and interim periods thereafter. We adopted this guidance this year and management believes our existing cash and cash equivalents as of December 31, 2017 are sufficient to fund our operations and do not raise substantial doubt about our ability to continue as a going concern.

In March 2016, the FASB issued ASU No. 2016-09- Improvements to Employee Share-Based Payment Accounting, which simplified the accounting for share-based payment transactions, including the income tax consequences, the calculation of diluted earnings per share, the treatment of forfeitures, the classification of awards as either equity or liabilities, and the classification on the statement of cash flows. For public business entities, the amendments in this update are effective for annual periods beginning after December 15, 2016 and interim periods within those annual periods. Early adoption is permitted for any entity in any interim or annual period. We adopted ASU 2016-09 with effect from January 1, 2015. The adoption of this standard did not have an impact on our financial statements.

In November 2016, the FASB issued ASU No. 2016-18 relating to restricted cash. The new guidance requires amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the consolidated statement of cash flows. This guidance is required to be adopted beginning with the first fiscal quarter of 2018; early adoption is permitted. We adopted this guidance effective June 30, 2017, which required us to include restricted cash within the beginning and ending balance of cash and cash equivalents for the year ended December 31, 2017. We had no restricted cash prior to adopting this guidance, thus we were not required to revise prior period statements of cash flows. The adoption of this guidance does not impact our financial position or results of operations.

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

We are exposed to market risk related to changes in interest rates. As of December 31, 2017, we had cash, cash equivalents, and short-term investments of $81.2 million, consisting of deposits with commercial banks in checking, money market funds, U.S. Treasury securities, commercial paper, and corporate debt securities with a final maturity of each security of less than one year. The primary objectives of our investment policy are to preserve principal and maintain liquidity to meet operating needs, while also maximizing total returns in a manner that complies with our primary two objectives.

Our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure to any single issue, issuer, or type of investment. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments are in short-term securities. We believe that we do not have any material exposure to changes in the fair value of these assets as a result of changes in interest rates due to the short-term nature of our cash equivalents and marketable securities. Declines in interest rates, however, would reduce future investment income. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 10% change in interest rates during any of the periods presented would not have had a material effect on the fair market value of our portfolio, or on our financial statements.

We are subject to interest rate risk in connection with the borrowings under our term loan agreement. As of December 31, 2017, we had $5.0 million outstanding principal amount under our term loan agreement. The term loan bears interest at a rate equal to the lender's prime rate minus 1.75%. A 10% change in interest rates during any of the periods presented would not have had a material effect on our interest obligations under the term loan agreement.

Item 8. Financial Statements and Supplementary Data.

For information regarding our financial statements and supplementary data, please refer to the Notes to the Consolidated Financial Statements included elsewhere in this report.

As a “smaller reporting company,” as defined by Rule 12b-2 of the Exchange Act and pursuant to Article 8, Regulation X and Item 302 of Regulation S-K, we are permitted to provide scaled Item 8 disclosure.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2017. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, or the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2017, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) and Rule 15d-15(f) of the Exchange Act. Our internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Our internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;

(ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

(iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

The effectiveness of any system of internal control over financial reporting, including ours, is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting, including ours, no matter how well designed and operated, can only provide reasonable, not absolute, assurances. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate. Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2017. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the

Treadway Commission (COSO) Internal Control-Integrated Framework (2013). Based on our assessment using those criteria, our management has concluded that, as of December 31, 2017, our internal control over financial reporting was effective.

Changes in Internal Control Over Financial Reporting

No significant changes in our internal control over financial reporting occurred during the fiscal quarter ended December 31, 2017, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by Item 10 of Form 10-K is incorporated by reference to our Proxy Statement for the 2018 Annual Meeting of Shareholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2017.

Item 11. Executive Compensation.

The information required by Item 11 of Form 10-K is incorporated by reference to our Proxy Statement for the 2018 Annual Meeting of Shareholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2017.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by Item 12 of Form 10-K is incorporated by reference to our Proxy Statement for the 2018 Annual Meeting of Shareholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2017.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by Item 13 of Form 10-K is incorporated by reference to our Proxy Statement for the 2018 Annual Meeting of Shareholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2017.

Item 14. Principal Accounting Fees and Services.

The information required by Item 14 of Form 10-K is incorporated by reference to our Proxy Statement for the 2018 Annual Meeting of Shareholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2017.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The financial statements, schedules and exhibits filed as a part of this Annual Report on Form 10-K are as follows:

(1) Financial statements – The financial statements included in Item 8 are filed as part of this Annual Report on Form 10-K.

(2) Financial Statement Schedules – All schedules have been omitted because they are not applicable or required, or the information required to be set forth therein is included in the consolidated Financial Statements or notes thereto included in Item 8 of this Annual Report on Form 10-K.

(3) Exhibits – The exhibits required to be filed as part of this report are listed in the Exhibit List attached hereto and are incorporated herein by reference.

INDEX TO EXHIBITS

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
2.1†	Agreement and Plan of Merger, dated as of April 18, 2017, by and among Nivalis Therapeutics, Inc., Nautilus Merger Sub, Inc. and Alpine Immune Sciences, Inc.	8-K	001-37449	2.1	April 18, 2017
2.2	Form of Support Agreement, by and between Nivalis Therapeutics, Inc. and certain stockholders of Alpine Immune Sciences, Inc.	8-K	001-37449	2.2	April 18, 2017
2.3	Form of Support Agreement, by and between Alpine Immune Sciences, Inc. and certain stockholders of Nivalis Therapeutics, Inc.	8-K	001-37449	2.3	April 18, 2017
2.4	Form of Support Agreement, by and between Alpine Immune Sciences, Inc. and The Estate of Arnold H. Snider, III	8-K	001-37449	2.4	April 18, 2017
2.5	Form of Support Agreement, by and between Alpine Immune Sciences, Inc. and the Deerfield Signatories	8-K	001-37449	2.5	April 18, 2017
3.1+	Amended and Restated Certificate of Incorporation of the Registrant, as amended				
3.2	Amended and Restated Bylaws of the Registrant	S-1	333-204127	3.4	May 13, 2015
4.1+	Form of Common Stock Certificate of the Registrant				
4.2	Second Amended and Restated Warrant to Purchase Common Stock, dated February 18, 2011, issued to Horizon Credit I LLC	S-1	333-204127	4.2	May 13, 2015
4.3	Second Amended and Restated Warrant to Purchase Common Stock, dated February 18, 2011, issued to Horizon Credit II LLC	S-1	333-204127	4.3	May 13, 2015
4.4	Second Amended and Restated Investor Rights Agreement, dated November 18, 2014	S-1	333-204127	4.4	May 13, 2015
4.5+	Warrant to Purchase Shares, dated December 16, 2016, by and between Alpine Immune Sciences, Inc. and Silicon Valley Bank				
4.6+	Form of Warrant to Purchase Shares of Common Stock issued to certain service providers on April 12, 2017 pursuant to the Amended and Restated 2015 Stock Plan, as amended				
10.1*	Nivalis Therapeutics, Inc. 2015 Equity Incentive Plan	S-8	333-205220	4.4	June 25, 2015
10.2*	Form of Notice of Stock Option Grant and Stock Option Agreement for Employees under the Nivalis Therapeutics, Inc. 2015 Equity Incentive Plan	S-8	333-205220	4.5	June 25, 2015
10.3*	Form of Notice of Stock Option Grant and Stock Option Agreement for Non-Employee Directors under the Nivalis Therapeutics, Inc. 2015 Equity Incentive Plan	S-8	333-205220	4.6	June 25, 2015
10.4*	N30 Pharmaceuticals, Inc. 2012 Stock Incentive Plan	S-1	333-204127	10.2	May 13, 2015
10.5*	Form of Stock Option Agreement pursuant to N30 Pharmaceuticals, Inc. 2012 Stock Incentive Plan	S-1	333-204127	10.3	May 13, 2015

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
10.6*	Nivalis Therapeutics, Inc. Employee Stock Purchase Plan	S-8	333-205220	4.7	June 25, 2015
10.7*	Employment Agreement, dated as of January 1, 2015, by and between the Registrant and Jon Congleton	S-1	333-204127	10.6	May 13, 2015
10.8*	Amendment to Employment Agreement, dated as of March 6, 2015, by and between the Registrant and Jon Congleton	S-1	333-204127	10.7	May 13, 2015
10.9*	Amendment to Employment Agreement, dated as of January 12, 2017, by and between the Registrant and Jon Congleton	10-K	001-37449	10.9	February 13, 2017
10.10*	Confidential Separation Agreement and General Release, dated as of January 15, 2017, by and between the Registrant and Jon Congleton	10-K	001-37449	10.10	February 13, 2017
10.11*	Employment Agreement, dated as of November 1, 2012, by and between the Registrant and Janice Troha	S-1	333-204127	10.8	May 13, 2015
10.12*	Amendment to Employment Agreement, dated as of December 15, 2014, by and between the Registrant and Janice Troha	S-1	333-204127	10.9	May 13, 2015
10.13*	Amendment to Employment Agreement, dated as of March 6, 2015, by and between the Registrant and Janice Troha	S-1	333-204127	10.10	May 13, 2015
10.14*	Amendment to Employment Agreement, dated as of January 12, 2017, by and between the Registrant and Janice Troha	10-K	001-37449	10.14	February 13, 2017
10.15*	Retention Bonus letter agreement, dated as of January 9, 2017, by and between the Registrant and Janice Troha	10-K	001-37449	10.15	February 13, 2017
10.16*	Employment Agreement, dated as of January 21, 2015, by and between the Registrant and R. Michael Carruthers	S-1	333-204127	10.11	May 13, 2015
10.17*	Amendment to Employment Agreement, dated as of January 12, 2017, by and between the Registrant and R. Michael Carruthers	10-K	001-37449	10.17	February 13, 2017
10.18*	Retention Bonus letter agreement, dated as of January 9, 2017, by and between the Registrant and R. Michael Carruthers	10-K	001-37449	10.18	February 13, 2017
10.19*	Employment Agreement, dated as of April 18, 2016, by and between the Registrant and David M. Rodman, M.D.	10-Q	001-37449	10.1	May 3, 2016
10.20*	Amendment to Employment Agreement, dated as of January 12, 2017, by and between the Registrant and David M. Rodman, M.D.	10-K	001-37449	10.20	February 13, 2017
10.21*	Confidential Separation Agreement and General Release, dated as of January 15, 2017, by and between the Registrant and David Rodman, M.D.	10-K	001-37449	10.21	February 13, 2017
10.22*	Notice of Inducement Stock Option Grant and Inducement Stock Option Agreement, each dated April 18, 2016 by and between the Registrant and David M. Rodman, M.D.	10-Q	001-37449	10.2	May 3, 2016

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
10.23*	Notice of Restricted Stock Unit Inducement Grant and Inducement Restricted Stock Unit Agreement, each dated April 18, 2016 by and between the Registrant and David M. Rodman, M.D.	10-Q	001-37449	10.3	May 3, 2016
10.24*	Form of Indemnification Agreement entered into by and between the Registrant and its directors and officers	S-1	333-204127	10.18	May 13, 2015
10.25*	Separation and Release Agreement effective July 19, 2017 between Janice Troha and Nivalis Therapeutics, Inc.	8-K	001-37449	99.2	July 20, 2017
10.26+	Loan and Security Agreement, dated December 16, 2016, by and among Alpine Immune Sciences, Inc. and Silicon Valley Bank				
10.27	Sales Agreement, dated July 5, 2016, by and between the Registrant and Cowen and Company, LLC	S-3	333-212404	10.1	July 6, 2016
10.28	Non-Employee Director Compensation Guidelines	10-Q	001-37449	10.1	August 4, 2015
10.29#	License and Research Agreement by and between Alpine Immune Sciences, Inc. and Kite Pharma, Inc., effective as of October 26, 2015	8-K	001-37449	10.1	October 24, 2017
10.30#	License and Research Agreement Amendment No. 1 by and between AIS Operating Co., Inc. and Kite Pharma, Inc., effective as of October 20, 2017	8-K	001-37449	10.2	October 24, 2017
10.31*	Change of Control and Severance Policy	8-K	001-37449	10.1	December 11, 2017
10.32+*	Employment Agreement, dated as of March 14, 2017, by and between the Registrant and Mitchell H. Gold, M.D.				
10.33+*	Employment Agreement, dated as of January 1, 2018, by and between the Registrant and Mitchell H. Gold, M.D.				
10.34+*	Employment Agreement, dated as of April 1, 2017, by and between the Registrant and Paul Rickey				
10.35+*	Employment Agreement, dated as of January 1, 2018, by and between the Registrant and Paul Rickey				
10.36+*	Employment Agreement, dated as of August 14, 2016, by and between the Registrant and Stanford Peng, M.D., Ph.D.				
10.37+*	Employment Agreement, dated as of January 1, 2018 , by and between the Registrant and Stanford Peng, M.D., Ph.D.				
10.38*	Alpine Immune Sciences, Inc. (now known as AIS Operating Co., Inc.) Amended and Restated 2015 Stock Plan, as amended	S-8 POS	333-218134	4.1	September 11, 2017
10.39*	Form of Option Agreement under the Alpine Immune Sciences, Inc. (now known as AIS Operating Co., Inc.) Amended and Restated 2015 Stock Plan, as amended	S-8 POS	333-218134	4.2	September 11, 2017
10.40*	Separation and Release Agreement effective July 19, 2017 between R. Michael Carruthers and Nivalis Therapeutics, Inc.	8-K	001-37449	99.1	July 20, 2017
21.1+	List of subsidiaries of the Registrant				

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
23.1+	Consent of Independent Registered Public Accounting Firm				
24.1+	Powers of Attorney (contained on signature page)				
31.1+	Certification of Principal Executive Officer Required Under Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended				
31.2+	Certification of Principal Financial Officer Required Under Rules 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended				
32.1+	Certification of Principal Executive Officer Required Under Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350				
32.2+	Certification of Principal Financial Officer Required Under Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, and 18 U.S.C. Section 1350				
101.INS+	XBRL Instance Document				
101.SCH+	XBRL Taxonomy Extension Schema Document				
101.CAL+	XBRL Taxonomy Extension Calculation Linkbase Document				
101.LAB+	XBRL Taxonomy Extension Label Linkbase Document				
101.PRE+	XBRL Taxonomy Extension Presentation Linkbase Document				
101.DEF+	XBRL Taxonomy Extension Definition Linkbase Document				

* Indicates a management contract or a compensatory plan, contract or arrangement.

\+ Filed herewith.

† All schedules and exhibits to the Merger Agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the Securities and Exchange Commission upon request.

\# Portions of this exhibit have been omitted pursuant to a request for confidential treatment and the omitted portions have been filed separately with the Securities and Exchange Commission.

SIGNATURES

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

ALPINE IMMUNE SCIENCES, INC.

Date: March 28, 2018

By: /s/ *Mitchell Gold*
Name: Mitchell Gold
Title Executive Chairman and Chief Executive Officer

ALPINE IMMUNE SCIENCES, INC.

Date: March 28, 2018

By: /s/ *Paul Rickey*
Name: Paul Rickey
Title: Senior Vice President and Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Mitchell Gold and Paul Rickey, and each of them, with full power of substitution and resubstitution and full power to act without the other, as his or her true and lawful attorney-in-fact and agent to act in his or her name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file, any and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their and his or her substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

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

Name	Title	Date
/s/ *Mitchell Gold* **Mitchell Gold**	Executive Chairman and Chief Executive Officer (Principal Executive Officer)	March 28, 2018
/s/ *Paul Rickey* **Paul Rickey**	Senior Vice President and Chief Financial Officer (Principal Accounting and Financial Officer)	March 28, 2018
/s/ *Peter Thomson* **Peter Thompson**	Director	March 28, 2018
/s/ *James N. Topper* **James N. Topper**	Director	March 28, 2018
/s/ *Jay Venkatesan* **Jay Venkatesan**	Director	March 28, 2018
/s/ *Robert Conway* **Robert Conway**	Director	March 28, 2018
/s/ *Peter Sekhri* **Peter Sekhri**	Director	March 28, 2018

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Alpine Immune Sciences, Inc.

Opinion on the Financial Statements

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

Basis for Opinion

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

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

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

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 2015.

Seattle, Washington
March 28, 2018

ALPINE IMMUNE SCIENCES, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share amounts)

	December 31, 2017	December 31, 2016
Assets		
Current assets:		
Cash and cash equivalents	$ 8,000	$ 11,819
Short-term investments	73,240	—
Prepaid expenses and other current assets	1,308	36
Total current assets	82,548	11,855
Restricted cash	132	—
Property and equipment, net	1,089	740
Intangible assets	1,453	—
Total assets	$ 85,222	$ 12,595
Liabilities, convertible preferred stock and stockholders' equity (deficit)		
Current liabilities:		
Accounts payable	$ 193	$ 127
Accrued liabilities	382	170
Income taxes payable	—	66
Deferred revenue	277	2,008
Deferred rent, current portion	48	33
Current portion of long-term debt	995	—
Total current liabilities	1,895	2,404
Deferred rent, long-term portion	66	—
Deferred tax liability	305	—
Long-term debt	4,039	113
Total liabilities	6,305	2,517
Commitments and contingencies		
Convertible preferred stock, $0.001 par value, 10,000,000 shares authorized and zero shares issued and outstanding at December 31, 2017; $0.0001 par value, 22,081,852 shares authorized and 4,311,770 shares issued and outstanding at December 31, 2016; aggregate liquidation preference of zero and $11,583 at December 31, 2017 and 2016, respectively	—	11,535
Stockholders' equity (deficit):		
Common stock, $0.001 par value, 200,000,000 shares authorized, 13,881,645 shares issued and 13,831,178 shares outstanding at December 31, 2017; $0.0001 par value, 46,500,000 shares authorized, 608,701 shares issued and outstanding at December 31, 2016	14	—
Treasury stock, at cost; 50,467 and zero shares at December 31, 2017 and 2016, respectively	—	—
Additional paid-in capital	88,346	144
Accumulated other comprehensive loss	(59)	—
Accumulated deficit	(9,384)	(1,601)
Total stockholders' equity (deficit)	78,917	(1,457)
Total liabilities, redeemable convertible preferred stock and stockholders' equity (deficit)	$ 85,222	$ 12,595

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

ALPINE IMMUNE SCIENCES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)
(in thousands except share and per share amounts)

	Years Ended December 31,		
	2017	2016	2015
Collaboration revenue	$ 1,731	$ 2,950	$ 492
Operating expenses:			
Research and development	10,626	2,989	422
General and administrative	6,079	1,149	441
Total operating expenses	16,705	4,138	863
Loss from operations	(14,974)	(1,188)	(371)
Other income (expense):			
Bargain purchase gain	6,601	—	—
Interest expense	(152)	—	—
Interest and other income	542	22	2
Loss before taxes	(7,983)	(1,166)	(369)
Income tax benefit (expense)	200	(66)	—
Basic and diluted net loss attributable to common stockholders	$ (7,783)	$ (1,232)	$ (369)
Comprehensive loss:			
Unrealized loss on investments	(59)	—	—
Comprehensive loss	$ (7,842)	$ (1,232)	$ (369)
Basic and diluted net loss per share applicable to common stockholders	$ (1.20)	$ (2.18)	$ (0.74)
Weighted-average shares used to compute basic and diluted net loss per share attributable to common stockholders	6,481,665	564,816	496,900

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

ALPINE IMMUNE SCIENCES, INC.
CONSOLIDATED STATEMENT OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(in thousands, except share amounts)

	Convertible Preferred Stock		Common Stock		Treasury		Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Shares	Amount				
Balance, January 1, 2015	—	$ —	—	$ —	—	$ —	$ —	$ —	$ —	$ —
Issuance common stock	—	—	496,900	—	—	—	1	—	—	1
Issuance of convertible preferred stock	1,212,436	610	—	—	—	—	—	—	—	—
Stock-based compensation and warrant expense	—	—	—	—	—	—	16	—	—	16
Net loss	—	—	—	—	—	—	—	—	(369)	(369)
Balance, December 31, 2015	1,212,436	610	496,900	—	—	—	17	—	(369)	(352)
Issuance of convertible preferred stock, net of issuance costs	3,099,334	10,925	—	—	—	—	—	—	—	—
Exercise of stock options	—	—	111,801	—	—	—	50	—	—	50
Stock-based compensation	—	—	—	—	—	—	77	—	—	77
Net loss	—	—	—	—	—	—	—	—	(1,232)	(1,232)
Balance, December 31, 2016	4,311,770	11,535	608,701	—	—	—	144	—	(1,601)	(1,457)
Issuance of Series A-1 convertible preferred stock	4,989,663	37,666	—	—	—	—	—	—	—	—
Conversion of convertible preferred stock to common stock	(9,301,433)	(49,201)	9,301,433	1	—	—	49,200	—	—	49,201
Common stock acquired in business combination	—	—	3,914,058	—	—	—	38,103	—	—	38,103
Adjustment of par value from $0.0001 per share to $0.001 per share	—	—	—	13	—	—	(13)	—	—	—
Conversion of warrant liability to equity	—	—	—	—	—	—	52	—	—	52
Exercise of stock options and common stock warrants	—	—	57,453	—	—	—	22	—	—	22
Repurchase of common stock	—	—	(50,467)	—	50,467	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—	838	—	—	838
Unrealized loss on investments	—	—	—	—	—	—	—	(59)	—	(59)
Net loss	—	—	—	—	—	—	—	—	(7,783)	(7,783)
Balance, December 31, 2017	—	$ —	13,831,178	$ 14	50,467	$ —	$ 88,346	$ (59)	$ (9,384)	$ 78,917

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

ALPINE IMMUNE SCIENCES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Years Ended December 31,		
	2017	2016	2015
Operating activities:			
Net loss	$ (7,783)	$ (1,232)	$ (369)
Adjustments to reconcile net loss to net cash used in operating activities:			
Bargain purchase gain	(6,601)	—	—
Depreciation expense	241	69	1
Non-cash interest expense	87	—	—
Common stock issued for intellectual property	—	—	1
Stock-based compensation expense	838	77	16
Changes in operating assets and liabilities:			
Prepaid expenses	(1,193)	(26)	(10)
Accounts payable	66	80	47
Deferred revenue	(1,731)	(2,950)	4,958
Accrued liabilities	(259)	39	176
Deferred income tax	(204)	—	—
Deferred rent and other	(33)	146	—
Net cash (used in) provided by operating activities	(16,572)	(3,797)	4,820
Investing activities:			
Purchase of property and equipment	(586)	(782)	(7)
Purchase of short-term investments	(88,307)	—	—
Proceeds from sale short-term investments	27,960	—	—
Cash and cash equivalents acquired in connection with merger	31,130	—	—
Net cash used in investing activities	(29,803)	(782)	(7)
Financing activities:			
Proceeds from sale of preferred stock	37,666	10,925	610
Proceeds from borrowings	5,000	—	—
Proceeds from exercise of stock options and common stock warrants	22	50	—
Net cash provided by financing activities	42,688	10,975	610
Net (decrease) increase in cash and cash equivalents and restricted cash	(3,687)	6,396	5,423
Cash and cash equivalents and restricted cash at beginning of period	11,819	5,423	—
Cash and cash equivalents and restricted cash at end of period	$ 8,132	$ 11,819	$ 5,423
Supplemental Information			
Convertible preferred stock exchanged for common stock	$ 49,201	$ —	$ —
Discount in connection with issuance of debt	$ 428	$ —	$ —
Cash paid for income taxes	$ 76	$ —	$ —
Cash paid for interest	$ 53	$ —	$ —
Reclass of preferred stock warrant liability to equity	$ 52	$ —	$ —

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

1. Description of Business

Alpine Immune Sciences, Inc. (the "Company", "Alpine", "we", "us", or "our") is focused on discovering and developing modern, protein-based immunotherapies targeting the immune synapse to treat cancer, inflammation, and other diseases. Our proprietary scientific platform uses a process known as directed evolution, or an iterative scientific engineering process purposefully conducted to "evolve" a protein to create therapeutics potentially capable of modulating immune system interactions. In our pre-clinical animal studies, our platform has proven capable of identifying novel molecules, including single domains capable of modulating multiple targets. We were incorporated under the laws of the State of Delaware and are headquartered in Seattle, Washington.

Significant estimates inherent in the preparation of the accompanying consolidated financial statements include recoverability and useful lives of intangible assets and the fair value of equity based awards.

Reverse Merger and Subscription Agreement

On April 18, 2017, we entered into a merger agreement with Nivalis Therapeutics, Inc. ("Nivalis"), a public biotechnology company, and one of its wholly-owned subsidiaries pursuant to which, the subsidiary merged with and into Alpine, with Alpine continuing as a wholly owned subsidiary of Nivalis and the surviving corporation of the merger (the "Merger Agreement"). Nivalis Therapeutics, Inc. was incorporated in Delaware in March 2007. Alpine Immune Sciences, Inc. (prior to its business combination with Nivalis Therapeutics, Inc.) was incorporated in Delaware on December 30, 2014.

The merger is intended to qualify for federal income tax purposes as a tax-free reorganization under the provisions of Section 368(a) of the Internal Revenue Code of 1986, as amended. At the closing of the merger, each outstanding share of our capital stock (common stock and preferred stock) was converted into the right to receive shares of Nivalis common stock (subject to the payment of cash in lieu of fractional shares and after giving effect to a 1:4 reverse stock split of Nivalis common stock) such that, immediately following the effective time of the merger, preexisting Nivalis stockholders, optionholders, and warrantholders owned, or held rights to acquire, approximately 26% of the fully-diluted common stock of Nivalis, which changed its name to "Alpine Immune Sciences, Inc." following the completion of the merger and Alpine's preexisting stockholders, optionholders, and warrantholders owned, or held rights to acquire approximately 74% of the fully-diluted common stock of Nivalis. The issuance of the shares to our pre-existing stockholders was registered under the Securities Act of 1933, as amended, pursuant to a registration statement on Form S-4 (No. 333-218134) (the "Registration Statement") declared effective by the Securities and Exchange Commission (the "SEC") on June 6, 2017.

Contemporaneously with the execution and delivery of the Merger Agreement, certain of our pre-existing stockholders entered into a subscription agreement with us pursuant to which such stockholders purchased, immediately prior to the closing of the merger, 1,335,118 shares of our capital stock at a purchase price of $12.74 per share for an aggregate purchase price of approximately $17.0 million.

The merger and the subscription described above were consummated on July 24, 2017.

2. Summary of Significant Accounting Policies

Basis of Presentation and Use of Estimates

The accompanying consolidated financial statements have been prepared in accordance with the rules and regulations of the SEC and generally accepted accounting principles in the United States of America ("GAAP"). The preparation of financial statements in conformity with GAAP requires management to make judgments, estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates and assumptions on historical experience when available and on various factors we believe to be reasonable under the circumstances. Actual results could differ materially from those estimates.

Principles of Consolidation

Our consolidated financial statements include the financial position and results of operations of Alpine and AIS Operating Co., Inc., our wholly owned subsidiary and operating company. On July 24, 2017, we closed the merger on the terms described in more detail in Note 1. In connection with the merger, Nivalis effected a 1:4 reverse stock split of its common stock. Upon the closing of the merger, (1) a wholly-owned subsidiary of Nivalis merged with and into Alpine, with Alpine (renamed as "AIS Operating Co., Inc.") remaining as the surviving entity; and (2) Nivalis was renamed as "Alpine Immune Sciences, Inc."

Segments

We operate in one segment and use cash flow as the primary measure to manage our business and do not segment the business for internal reporting or decision-making purposes.

Business Combination

We use our best estimates and assumptions to accurately assign fair value to the tangible and intangible assets acquired and liabilities assumed at the acquisition date. Our estimates are inherently uncertain and subject to refinement. During the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the fair value of these tangible and intangible assets acquired and liabilities assumed, with the corresponding offset to bargain purchase gain. In addition, uncertain tax positions and tax-related valuation allowances are initially established in connection with a business combination as of the acquisition date. Our management collects new information and reevaluates these estimates and assumptions quarterly and records any adjustments to our preliminary estimates to bargain purchase gain during the measurement period. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to our consolidated statements of operations and comprehensive income (loss).

We allocated the preliminary purchase price to the acquired tangible and intangible assets and assumed liabilities of Nivalis based on their estimated fair values as of the acquisition date. The fair value of our identifiable intangible asset is based on detailed valuations using information and assumptions provided by management. The allocation of the purchase consideration to the assets acquired and liabilities assumed in our financial statements was finalized as of December 31, 2017.

Cash and cash equivalents

We consider all highly liquid investments with an original maturity of 90 days or less at the time of purchase to be cash equivalents. Cash and cash equivalents consist of deposits with commercial banks in checking and interest-bearing accounts, and highly liquid money market funds.

Concentrations of Credit Risk

Cash and cash equivalents, receivables, accounts payable and accrued liabilities, which are recorded at invoiced amount or cost, approximate fair value based on the short-term nature of these financial instruments. The fair value of short-term investments is based on quoted market prices. Financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash and cash equivalents and short-term investments. Periodically, we maintain deposits in financial institutions in excess of government insured limits. We believe we are not exposed to significant credit risk as our deposits are held at financial institutions we believe to be of high credit quality securities such as money market funds, U.S. Treasury securities, and commercial paper. To date, we have not realized any losses on these deposits.

Short-Term Investments

Our short-term investments include funds invested in highly liquid money market funds, U.S. Treasury securities, commercial paper, and corporate debt securities with a final maturity of each security of less than one year. All investments are classified as available-for-sale securities and are recorded at fair value based on quoted prices in active markets, with unrealized gains and losses excluded from earnings and reported in other comprehensive income (loss). Purchase premiums and discounts are recognized as interest income using the interest method over the terms of the securities. Realized gains and

losses and declines in fair value deemed to be other than temporary are reflected in the consolidated statements of operations and comprehensive income (loss) using the specific-identification method.

Property and Equipment

Property and equipment are stated at cost, net of accumulated depreciation. Depreciation is recorded using the straight-line method the estimated useful lives of the assets, generally three to five years, while leasehold improvements are amortized over the shorter of their estimated useful lives or the related lease term. Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is credited or charged to operations. Maintenance and repairs are expensed as incurred. Major improvements are capitalized as additions to property and equipment.

Intangible Asset

Our intangible asset is our indefinite-life GSNOR inhibitor in-process research and development asset ("IPR&D") acquired from Nivalis. The IPR&D represents the processes, expertise, and technology employed in the development of S-nitrosoglutathione reductase ("GSNOR") inhibitors and Nivalis' lead product candidate, cavosonstat. The IPR&D represents the estimated fair value as of the acquisition date of substantive in-process projects that have not reached technological feasibility. The primary basis for determining technological feasibility of these projects is obtaining regulatory approval. The valuation of IPR&D is determined using a discounted cash flow method. In determining the value of IPR&D, management considers, among other factors, the stage of completion of the projects, the technological feasibility of the projects, whether the projects have an alternative future use, and the estimated residual cash flows that could be generated from the various projects and technologies over their respective projected economic lives. The discount rate used is determined at the time of acquisition and includes a rate of return which accounts for the time value of money, as well as risk factors reflecting the economic risk that the projected cash flows may not be realized.

We review our IPR&D at least annually for possible impairment. IPR&D is reviewed for possible impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of the IPR&D below their carrying values. We test our IPR&D each year on October 1. Our IPR&D asset totaled $1.5 million at December 31, 2017.

Impairment of Long-lived Assets

We evaluate our long-lived tangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. If the carrying value exceeds the undiscounted future cash flows estimated to result from the use and eventual disposition of the asset, we write down the asset to its estimated fair value. Impairment is assessed by comparing the undiscounted cash flows expected to be generated by the asset to its carrying value. We did not record any impairments in the years ended December 31, 2017, 2016 and 2015.

Accrued Liabilities

As part of the process of preparing our consolidated financial statements, we are required to estimate accruals for professional services and research and development expenses. This process involves reviewing contracts and vendor agreements, and communicating with applicable personnel to identify services that have been performed on our behalf. We estimate the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. We estimate accrued liabilities as of each balance sheet date based on known facts and circumstances.

Although we do not expect our estimates to be materially different from amounts actually incurred, if our estimates of the status and timing of services performed differ from the actual status and timing of services performed, we may report amounts that are too high or too low in any particular period. To date, we have not experienced any significant adjustments to our estimates.

Leases and Deferred Rent

We have entered into lease agreements for office and laboratory space. These leases are classified as operating leases. Rent payments, rent-free periods and rent increases are recognized as rent expense on a straight-line basis over the lease term. The difference between rent expense recognized and rental payments is recorded as deferred rent in the accompanying consolidated balance sheets.

Common Stock Warrants

We granted common stock warrants to certain non-employee professional advisers. We account for our warrants at fair value, with changes in fair value recognized in operating expenses. Common stock warrants are initially recorded at their issuance date fair value and are subsequently remeasured at each balance sheet date. These warrants are valued using the Black-Scholes option pricing model based on the estimated market value of the underlying common stock at the valuation measurement dates, the remaining contractual term of the warrant, risk-free interest rates, expected dividends, and expected volatility of the price of the underlying common stock.

Derivative Financial Instruments

We evaluate all of our financial instruments, including issued stock purchase warrants, to determine if such instruments are derivatives or contain features qualifying as embedded derivatives. For derivative financial instruments accounted for as liabilities, the derivative instrument is initially recorded at its fair value and is then re-valued at each reporting date, with changes in the fair value reported in the consolidated statement of operations and comprehensive income (loss). We use the Black-Scholes option-pricing model to value the derivative instruments at inception and subsequent valuation dates. The classification of derivative instruments, including whether such instruments should be recorded as liabilities or as equity, is re-assessed at the end of each reporting period. We do not use derivative instruments to hedge exposures to cash flow, market, or foreign currency risks.

Revenue Recognition

We derive our revenue from collaboration and licensing agreements. We recognize revenue when each of the following four criteria are met: (1) persuasive evidence of an arrangement exists; (2) products have been delivered or services have been rendered; (3) the sales price is fixed or determinable; and (4) collectability is reasonably assured.

We recognize revenue under our License and Research Agreement (the “Collaboration Agreement”) with Kite Pharma, Inc. (“Kite”) in accordance with the guidance on multiple element arrangements. Multiple elements or deliverables may include (1) grants of, or options to obtain, intellectual property licenses; (2) research and development services; and/or (3) manufacturing or supply services. Payments typically received under these arrangements include one or more of the following: non-refundable upfront license fees, option exercise fees, payment for research and/or development efforts, amounts due upon the achievement of specified objectives, and/or royalties on future product sales.

The evaluation of multiple-element arrangements requires management to make judgments about (1) the identification of deliverables; (2) whether such deliverables are separable from other aspects of the contractual relationship; (3) the estimated selling price of each deliverable; and (4) the expected period of performance for each deliverable. To determine the units of accounting under a multiple-element arrangement, management evaluates certain separation criteria, including whether the deliverables have stand-alone value, based on the relevant facts and circumstances for each arrangement. Management then estimates the selling price for each unit of accounting and allocates the arrangement consideration to each unit using the relative selling price method. The allocated consideration for each unit of accounting is recognized based on the method most appropriate for that unit of account and in accordance with the revenue recognition criteria detailed above. If there are deliverables in an arrangement that are not separable from other aspects of the contractual relationship, they are treated as a combined unit of accounting, with the allocated revenue for the combined unit recognized in a manner consistent with the revenue recognition criteria applicable to the final deliverable in the combined unit. Payments received prior to satisfying the relevant revenue recognition criteria are recorded as deferred revenue in the accompanying consolidated balance sheets and recognized as revenue when the related revenue recognition criteria are met.

The Collaboration Agreement provides for non-refundable milestone payments. We recognize revenue that is contingent upon the achievement of a substantive milestone in its entirety in the period in which the milestone is achieved. A

milestone is considered substantive when the consideration payable to us for such milestone (1) is consistent with our performance necessary to achieve the milestone or the increase in value to the collaboration resulting from our performance; (2) relates solely to our past performance; and (3) is reasonable relative to all of the other deliverables and payments within the arrangement. In making this assessment, we consider all facts and circumstances relevant to the arrangement, including factors such as the scientific, regulatory, commercial, and other risks that must be overcome to achieve the milestone, the level of effort and investment required to achieve the milestone and whether any portion of the milestone consideration is related to future performance or deliverables.

We will periodically review the estimated performance periods under the Collaboration Agreement which provides for non-refundable upfront payments and fees. We will adjust the periods over which revenue should be recognized when appropriate to reflect changes in assumptions relating to the estimated performance periods. We could accelerate revenue recognition in the event of early termination of programs or if our expectations change. Alternatively, we could decelerate revenue recognition if programs are extended or delayed. While such changes to our estimates have no impact on our reported cash flows, the timing of revenue recorded in future periods could be materially impacted.

Research and Development

Research and development costs are expensed as incurred. Research and development costs include payroll and personnel expense, consulting costs, external contract research and development expenses, raw materials, drug product manufacturing costs and allocated overhead – including depreciation, rent and utilities. Research and development costs that are paid in advance of performance are capitalized as a prepaid expense and amortized over the service period as the services are provided.

Stock-based Compensation

We account for all stock-based compensation granted to employees and non-employees using a fair value method. Stock-based compensation awarded to employees and non-employees is measured at the grant date fair value for stock option grants. We use the Black-Scholes option pricing model to estimate the fair value of stock options at the grant date. Stock-based compensation to employees is recognized over the requisite service period of the awards, usually the vesting period, on a straight-line basis. Stock-based compensation awarded to non-employees is revalued over its vesting period using a Black-Sholes option pricing model. For performance-based awards where the vesting of the options may be accelerated upon the achievement of certain milestones, vesting and the related stock-based compensation is recognized as an expense when it is probable the milestone will be met. We recognize forfeiture of awards as they occur rather than estimating the expected forfeiture rate.

When awards are modified, we compare the fair value of the affected award measured immediately prior to modification to its value after modification. To the extent that the fair value of the modified award exceeds the original award, the incremental fair value of the modified award is recognized as compensation on the date of modification for vested awards, and over the remaining vesting period for unvested awards.

Income Taxes

Income taxes are accounted for using an asset and liability approach that requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the consolidated financial statement and tax bases of assets and liabilities at the applicable enacted tax rates. We will establish a valuation allowance for deferred tax assets if it is more likely than not that these items will expire before we are able to realize their benefits or that future deductibility is uncertain.

We recognize the tax benefit from uncertain tax positions only if it is more likely than not that the tax position will be sustained on examination by the tax authorities, based on the technical merits of the position. The tax position is measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. We recognize interest and penalties related to income tax matters in income tax expense if incurred.

Comprehensive Income (Loss)

Comprehensive income (loss) is comprised of net income (loss) and certain changes in equity excluded from net income (loss). For the year ended December 31, 2017, other comprehensive loss consists of unrealized losses on our short-term investments. There was no difference between comprehensive income (loss) and net income (loss) for the years ended December 31, 2016 and 2015.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, Revenue from Contracts with Customers, as amended, which amends the guidance for revenue recognition to replace numerous industry specific requirements. ASU 2014-09, as amended, implements a five-step process for customer contract revenue recognition focusing on transfer of control, as opposed to transfer of risk and rewards. ASU 2014-09, as amended, also requires enhanced disclosures regarding the nature, amount, timing, and uncertainty of revenues and cash flows from contracts with customers. Other major provisions include ensuring the time value of money is considered in the transaction price, and allowing estimates of variable consideration to be recognized before contingencies are resolved in certain circumstances. ASU 2014-09, as amended, is effective for reporting periods beginning after December 15, 2017. Early adoption is permitted, but not before December 15, 2016. Entities can transition to the standard either retrospectively or as a cumulative-effect adjustment as of the date of adoption. We adopted this new standard effective January 1, 2018, on a modified retrospective basis, which requires the cumulative effect of the adoption to be recognized as an adjustment to opening retained earnings in the first period of adoption. The adoption of ASU No. 2014-09 did not have a material impact on recorded amounts when applied to the opening balance sheet as of January 1, 2018, and is not expected to have a material impact on the amount or timing of the future amounts of net income. Additional impacts could still result when the standard is first applied to revenue transactions during the first quarter of 2018.

In February 2016, the FASB issued ASU No. 2016-02, Leases. ASU 2016-02 requires a lessee to separate the lease components from the non-lease components in a contract and recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. It also aligns lease accounting for lessors with the revenue recognition guidance in ASU 2014-09. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and is to be applied at the beginning of the earliest period presented using a modified retrospective approach. We are continuing to evaluate the effect the standard will have on our financial statements and related disclosures.

In August 2016, the FASB issued ASU No. 2016-15 which provides new guidance on the classification of certain cash receipts and payments in the statement of cash flows. The new guidance is intended to reduce diversity in practice in how certain transactions are classified in the statement of cash flows. We will be required to adopt the new guidance beginning with the first fiscal quarter of 2018; early adoption is permitted. We are currently assessing the impact the new guidance will have on our consolidated statements of cash flows.

In May 2017, the FASB issued ASU No. 2017-09 to provide clarity and reduce both diversity in practice and cost and complexity when applying the guidance in Compensation - Stock Compensation (Topic 718) about a change to the terms and conditions of a share-based payment award. The amendments in this update provide guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. The amendments in this update are effective for annual periods, including interim periods within those annual periods, beginning after December 15, 2017. Early adoption is permitted, and applied prospectively to modifications occurring on or after the adoption date. We do not expect the adoption of this standard to have a material impact on our financial statements. For the year ended December 31, 2017, there were no modifications to the terms or conditions of a share-based payment award.

Recently Adopted Accounting Pronouncements

In August 2014, the FASB issued ASU No.2014-15, Disclosures of Uncertainties about an Entity's Ability to Continue as a Going Concern. Under the new guidance, management is required to assess an entity's ability to continue as a going concern and to provide related footnote disclosures in certain circumstances. The provisions of this standard are effective for annual periods ending after December 31, 2016, and for annual and interim periods thereafter. We adopted this guidance this year and management believes our existing cash and cash equivalents as of December 31, 2017 are sufficient to fund our operations and do not raise substantial doubt about our ability to continue as a going concern.

In March 2016, the FASB issued ASU No. 2016-09- Improvements to Employee Share-Based Payment Accounting, which simplified the accounting for share-based payment transactions, including the income tax consequences, the calculation of diluted earnings per share, the treatment of forfeitures, the classification of awards as either equity or liabilities, and the classification on the statement of cash flows. For public business entities, the amendments in this update are effective for annual periods beginning after December 15, 2016 and interim periods within those annual periods. Early adoption is permitted for any entity in any interim or annual period. We adopted ASU 2016-09 with effect from January 1, 2015. The adoption of this standard did not have an impact on our financial statements.

In November 2016, the FASB issued ASU No. 2016-18 relating to restricted cash. The new guidance requires amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the consolidated statement of cash flows. This guidance is required to be adopted beginning with the first fiscal quarter of 2018; early adoption is permitted. We adopted this guidance effective June 30, 2017, which required us to include restricted cash within the beginning and ending balance of cash and cash equivalents for the year ended December 31, 2017. We had no restricted cash prior to adopting this guidance, thus we were not required to revise prior period statements of cash flows. The adoption of this guidance does not impact our financial position or results of operations.

3. Business Combination

On July 24, 2017, we closed the merger on the terms described in more detail in Note 1. In connection with the merger, Nivalis effected a 1:4 reverse stock split of its common stock. Upon the closing of the merger, (1) a wholly-owned subsidiary of Nivalis merged with and into Alpine, with Alpine (renamed as “AIS Operating Co., Inc.”) remaining as the surviving entity; and (2) Nivalis was renamed as “Alpine Immune Sciences, Inc.”

Under the terms of the Merger Agreement, Nivalis issued shares of its common stock to Alpine’s stockholders, at an exchange rate of 0.4969 shares of Nivalis common stock, after taking into account the 1:4 reverse stock split, for each share of Alpine’s common stock and preferred stock outstanding immediately prior to the merger. The exchange rate was determined through arms’-length negotiations between Nivalis and Alpine. Nivalis also assumed all of the stock options outstanding under Alpine’s Amended and Restated 2015 Stock Plan, as amended (the “Alpine Plan”), and stock warrants for Alpine’s capital stock outstanding immediately prior to the merger, with such stock options and warrants henceforth representing the right to purchase a number of shares of the Nivalis common stock equal to 0.4969 multiplied by the number of shares of Alpine’s common stock or preferred stock previously represented by such options and warrants. Nivalis also assumed the Alpine Plan. Immediately after the merger, there were 13,881,645 shares of common stock outstanding. Immediately after the merger, Alpine’s former stockholders, warrantholders, and optionholders owned, or held rights to acquire, approximately 74% of the fully-diluted common stock of Nivalis, which for these purposes is defined as the outstanding common stock of Nivalis, plus “in the money” options and warrants to purchase shares of Nivalis’ common stock, assuming all “in the money” options and warrants of Nivalis outstanding immediately prior to the merger are exercised on a cashless basis immediately prior to the closing of the merger, with Nivalis’ stockholders, optionholders, and warrantholders immediately prior to the merger owning, or holding rights to acquire, approximately 26% of the fully diluted common stock of Nivalis. More than 74% of Nivalis’ common stock outstanding immediately after the merger was held by stockholders party to lock-up agreements, pursuant to which such stockholders have agreed, except in limited circumstances, not to sell, transfer, or engage in swap or similar transactions with respect to shares of Nivalis’ common stock, including, as applicable, shares received in the merger and issuable upon exercise of certain warrants and options, for a period of 180 days following the completion of the merger.

The issuance of shares of Nivalis’ common stock to our pre-existing stockholders was registered with the SEC pursuant to the Registration Statement. Immediately prior to the merger, we issued and sold an aggregate of approximately $17.0 million of shares of our capital stock to certain existing stockholders. For accounting purposes, our historical financial statements were not adjusted to reflect the merger, other than adjustments to the capital structure to reflect the historical capital structure of Nivalis. No other adjustments to our historical assets and liabilities were made as a result of the merger.

In addition to the operating assets and liabilities of Nivalis, we also acquired Nivalis’ tax attributes, which primarily consisted of net operating losses which begin to expire in 2032. Our ability to utilization the tax attributes of Nivalis may be limited under Section 382 of the U.S. Internal Revenue Service and as such, have been reserved. We recorded a deferred tax liability related to future tax benefits arising from IPR&D acquired in the Merger. The combined organization is focusing on the development and commercialization of our innovative immunotherapies. Following the merger, the increased cash

resources and increased access to capital of the combined organization will help to support the clinical development of our products.

Consideration Transferred

The fair value of the consideration transferred was based on the most reliable measure, which was determined to be the market price of Nivalis shares of common stock as of the acquisition date. The fair value of the consideration transferred consisted of the following (in thousands except share and per share amounts):

Outstanding Nivalis common stock		3,914,058
Per share fair value of Nivalis common stock	$	9.60
Outstanding Nivalis stock options		421,992
Weighted average per share fair value of Nivalis stock options	$	1.25
Total fair value of consideration	$	38,103

Pursuant to the Merger Agreement, unvested Nivalis stock options immediately vested as of the closing of the business combination and were adjusted to give effect to the recapitalization.

Purchase Price Allocation

As Alpine was the accounting acquirer in the merger, we allocated the purchase price to the acquired tangible and intangible assets and assumed liabilities of Nivalis based on their estimated fair values as of the acquisition date. The excess of the estimated fair values of net assets acquired over the acquisition consideration paid was recorded as a bargain purchase gain in the consolidated statements of operations and comprehensive income (loss). The determination of the fair values of the assets acquired and liabilities assumed requires significant judgment, including third party valuation estimates relating to the value of the acquired IPR&D. The allocation of the purchase consideration to the assets acquired and liabilities assumed in our financial statements was finalized as of December 31, 2017.

Since the acquisition date, we have recorded adjustments to the allocation of the purchase consideration that included increases of $77,000 and $15,000 to other receivables and accrued liabilities, respectively, which resulted in a decrease of $62,000 in our bargain purchase gain. These purchase price adjustments are reflected in the accompanying consolidated balance sheet as of December 31, 2017. The final allocation of the purchase consideration is as follows (in thousands):

Assets:		
Cash and cash equivalents	$	31,130
Marketable securities		12,952
Other receivables		79
IPR&D		1,453
Total assets acquired		45,614
Liabilities:		
Accrued liabilities		(401)
Deferred tax liability		(509)
Total liabilities assumed		(910)
Bargain purchase gain		(6,601)
Total	$	38,103

We relied on significant Level 3 unobservable inputs to estimate the fair value of our acquired IPR&D using management's estimate of future royalties and expected earnings of the assets after taking into account an estimate of future expenses necessary to bring the products to completion. These projected cash flows were then discounted to their present values using a discount rate of 17%, which was considered commensurate with the risks and stages of development of the IPR&D.

The bargain purchase gain resulted from expenses incurred by Nivalis between the time the purchase price was negotiated and the close of the transaction, and changes in the Nivalis stock price during that period as the exchange ratio was fixed when the purchase price was negotiated.

We recognized acquisition-related costs of $1.5 million for the year ended December 31, 2017. These costs are included within general and administrative expense in our consolidated statements operations and of comprehensive income (loss).

Pro Forma Financial Information

The following pro forma consolidated results of net loss for the years ended December 31, 2017 and 2016 assume the business combination was completed as of January 1, 2016 (in thousands, except per share amounts):

	Years Ended December 31,	
	2017	2016
Pro forma revenues	$ 1,731	$ 2,950
Pro forma net loss	(18,327)	(32,695)
Pro forma basic and diluted net loss per share	$ (1.32)	$ (2.37)

For purposes of the pro forma disclosures above, the primary adjustments for the years ended December 31, 2017 include the elimination of acquisition related costs and acceleration of stock compensation expense upon the change in control.

4. Net Loss Per Share

We compute net loss per share attributable to common stockholders using the two-class method required for participating securities. We consider our convertible preferred stock to be participating securities. In accordance with the two-class method, earnings allocated to these participating securities, which include participation rights in undistributed earnings, are subtracted from net income to determine total undistributed earnings to be allocated to common stockholders. Net loss is not allocated to participating securities as there is no contractual obligation to share in net losses.

Basic net loss per share attributable to common stockholders is computed by dividing net loss attributable to common stockholders by the weighted-average number of common shares outstanding during the period. All participating securities are excluded from basic weighted-average common shares outstanding. Because of net losses recognized in each period, potential common shares issuable upon the exercise of outstanding stock options and warrants and the conversion of preferred shares into common shares have not been reflected in the calculation of diluted net loss per share due to the anti-dilutive effect. Diluted net loss per share, therefore, does not differ from basic net loss per share.

The basic and diluted net loss per share for the years ended December 31, 2017, 2016, and 2015 were computed based on the shares of common stock outstanding during the respective periods. The net loss per share for the year ended December 31, 2017 includes the conversion 9,301,433 shares of our convertible preferred stock into common stock, and 3,914,058 shares acquired in connection with the merger. The significant number of shares issued has affected the year-over-year comparability of our net loss per share calculations.

The common stock issuable upon the conversion or exercise of the following dilutive securities has been excluded from the diluted net loss per share attributable to common stockholders calculation because their effect would have been antidilutive for the periods presented:

	December 31,		
	2017	2016	2015
Convertible preferred stock	—	4,311,770	1,212,436
Warrants to purchase common stock	24,123	12,422	12,422
Options to purchase common stock	1,611,996	520,739	401,688
Total	1,636,119	4,844,931	1,626,546

5. Cash Equivalents and Short-Term Investments

The amortized cost and fair value of our cash equivalents and short-term investments are as follows (in thousands):

Assets:	December 31, 2017			
	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair market value
Money market funds	$ 5,680	$ —	$ —	$ 5,680
U.S. treasury bills	19,909	—	(21)	19,888
Corporate debt securities and commercial paper	53,390	—	(38)	53,352
Total	$ 78,979	$ —	$ (59)	$ 78,920

All short-term investments held as of December 31, 2017 were classified as available-for-sale securities and had contractual maturities of less than one year. There were no realized gains and losses on these securities for the periods presented. There were no short-term investments as of December 31, 2016.

6. Fair Value Measurements

Fair value is defined as the exchange price received for an asset or paid to transfer a liability, or an exit price, in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value, is as follows:

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

Level 2: Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3: Unobservable inputs supported by little or no market activity and significant to the fair value of the assets or liabilities.

At December 31, 2016, we had cash of $11.8 million and no assets measured using Level 1, Level 2, or Level 3 inputs. As of December 31, 2017, cash of $2.3 million is excluded from the fair value table below.

The following table summarizes our financial assets and liabilities measured at fair value on a recurring basis (in thousands):

Assets:	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Money market funds	$ 5,680	$ —	$ —	$ 5,680
U.S. treasury bills	19,888	—	—	19,888
Corporate debt securities and commercial paper	—	53,352	—	53,352
Total	$ 25,568	$ 53,352	$ —	$ 78,920

Our Level 2 assets consist of commercial paper and corporate debt securities. We review trading activity and pricing for our available-for-sale securities as of the measurement date. When sufficient quoted pricing for identical securities is not available, we use market pricing and other observable market inputs for similar securities obtained from various third-party data providers. These inputs either represent quoted prices for similar assets in active markets or have been derived from observable market data.

On June 30, 2017, we issued Series A-1 preferred stock warrants in connection with long-term debt. The warrant liability was classified as a Level 3 liability and the fair value was determined using the Black-Scholes option-pricing model with the following key assumptions: (1) stock price of $9.64; (2) a risk-free rate of 2.31%; (3) an expected volatility of 78%; and (4) a term of 9.5 years. Both observable and unobservable inputs are used to determine the fair value of the warrant liability. As a result, the unrealized gains and losses of the warrant liability may include changes in fair value attributable to

both observable inputs (e.g., changes in market interest rates) and unobservable inputs (e.g., probabilities of the occurrence of an early termination event).

In July 2017, in connection with the closing of the merger, our preferred stock warrants converted to common stock warrants. As a result of the change in the underlying shares, the warrants were equity-classified beginning on July 24, 2017. As of the date of conversion, we remeasured the fair value of the warrants, which resulted in a $1,000 decrease in fair value, which was recorded as other income in our accompanying consolidated statements of operations and comprehensive income (loss). See Note 10 for additional discussion of the warrants.

The following table shows the reconciliation of the Level 3 warrant liability measured and recorded at fair value on a recurring basis, using significant unobservable inputs (in thousands):

	Estimated Fair Value
Balance as of January 1, 2017	$ —
Fair value of warrants at issuance (June 30, 2017)	53,000
Change in fair value of warrant liability in connection with merger	(1,000)
Conversion of warrant liability to equity	(52,000)
Balance as of December 31, 2017	$ —

7. Prepaid expenses and other current assets

Prepaid expenses and other current assets consists of the following (in thousands):

	December 31,	
	2017	2016
Prepaid research and development	$ 791	$ —
Prepaid insurance	298	8
Prepaid other	91	28
Other receivables	128	—
Prepaid expenses and other current assets	$ 1,308	$ 36

8. Property and Equipment

Property and equipment consist of the following (in thousands):

	December 31,	
	2017	2016
Laboratory equipment	$ 1,161	$ 660
General equipment and furniture	110	74
Computer equipment and software	82	70
Leasehold improvements	47	6
Property and equipment, at cost	1,400	810
Less accumulated depreciation and amortization	(311)	(70)
Property and equipment, net	$ 1,089	$ 740

Depreciation expense was $241,000, $69,000 and 1,000 for the years ended December 31, 2017, 2016 and 2015, respectively.

9. Accrued Liabilities

Accrued liabilities and other current liabilities consisted of the following (in thousands):

	December 31,	
	2017	2016
Accrued research and development	$ 197	$ —
Accrued professional fees	112	5
Deferred compensation	—	61
Accrued taxes and licenses	30	61
Accrued other	43	43
Total	$ 382	$ 170

10. Long-term Debt

On June 30, 2017, we drew down a term loan of $5.0 million from Silicon Valley Bank with whom we had entered into a long-term financing arrangement on December 16, 2016. The loan has an interest-only period that expires on July 1, 2018, at which point we will be obligated to make thirty consecutive equal monthly payments of principal (each in an amount that will fully amortize the loan), plus accrued interest. Interest accrues at a floating per annum rate equal to the lender's prime rate minus 1.75%. As a condition to the loan, we agreed to pay a final payment fee of 7.5%, or $375,000, upon repayment of the loan. The final payment fee was recorded in long-term debt with an offsetting reduction in long-term debt and was accounted for as a debt discount.

Pursuant to the loan agreement we have pledged substantially all of our assets, excluding intellectual property, as collateral. The obligations under the loan agreement are subject to acceleration upon the occurrence of specified events of default, including a material adverse change in our business, operations, financial, or other condition. We assessed the likelihood of the lender accelerating payment of the loan due to a material adverse change in our business, operations, financial, or other condition as remote. As such, as of December 31, 2017, the classification of the loan is split between current and noncurrent based on the timing of payment obligations. The term loan agreement contains customary conditions to borrowings, events of default and negative covenants, including covenants that could limit our ability to, among other things, incur additional indebtedness, liens or other encumbrances; make dividends or other distributions; buy, sell or transfer assets; engage in any new line of business; and enter into certain transactions with affiliates. We were in compliance with our covenants as of December 31, 2017.

Also, in connection with the drawdown of the loan, we also granted the financial institution 7,069 Series A-1 Preferred Stock warrants at an exercise price of $12.38 per share. The fair value of the warrants on the date of issuance was $53,000, determined using the Black-Scholes option-pricing model, and was recorded as a discount to the note and as a warrant liability on the accompanying consolidated balance sheets. In connection with the merger and conversion of all outstanding Series A-1 preferred stock, the warrants became exercisable for 7,069 fully vested shares of our common stock. As a result of the change in the underlying shares, the warrants were equity-classified beginning on July 24, 2017.

The debt discount is being amortized to interest expense using the effective interest method over the repayment term of the initial loan amount. Non-cash interest expense associated with the amortization of the discount was $87,000, for year ended December 31, 2017. The unamortized discount was $341,000 as of December 31, 2017.

11. Commitments and Contingencies

Operating Lease

In 2016, we entered into a non-cancelable operating lease to rent office and laboratory space in Seattle, Washington. In April 2016, we amended the agreement to lease additional premises adjacent to our existing leased premises. Under our lease agreements, we lease approximately 11,158 square feet of office and laboratory space with an annual base rent of $566,000 in the first year, which will increase by 3% each year thereafter. The leases expire on December 31, 2019 and has two options to extend the lease term with each option enabling us to extend the lease term by twelve months. As required by the terms of the lease, in May 2017, we entered into a line of credit to establish collateral to support the security deposit in an amount of $132,000. This is recorded as restricted cash in the accompanying consolidated balance sheets.

We recognize rent expense on a straight-line basis over the lease period and accrue for rent expense incurred but not paid. The lease also requires us to pay additional amounts for operating and maintenance expenses. Rent expense was $529,000, $267,000 and $43,000 for the years ended December 31, 2017, 2016 and 2015, respectively.

Future minimum lease payments for our non-cancelable operating leases at December 31, 2017 are as follows (in thousands):

	Minimum Lease Payments
2018	$ 605
2019	606
2020	—
2021	—
2022	—
Total future minimum lease payments	$ 1,211

In January 2018, we entered into a lease amendment for approximately 6,184 square feet of additional office and laboratory space adjacent to our existing leased premises in Seattle, Washington. The lease expires on December 31, 2019 and has two options to extend the lease term with each option enabling us to extend the lease term by twelve months. The annual base rent due under the lease is $295,000 for the first year and will increase by 3.0% each year thereafter. Lease payments in connection with this amendment are not included in the table above.

12. License and Collaboration Agreement

In October 2015, we entered into a Collaboration and Licensing Agreement with Kite Pharma, Inc. to discover and develop protein-based immunotherapies targeting the immune synapse to treat cancer. Under our agreement, we are to perform certain research services and grant to Kite an exclusive license to two programs from our transmembrane immunomodulatory protein (TIP™) technology, which Kite is planning to further engineer into chimeric antigen receptor (“CAR”) and T cell receptor (“TCR”) product candidates.

Under the terms of the Collaboration Agreement, Kite made upfront payments to us of $5.5 million, which were initially recorded as deferred revenue. We will also be eligible to receive milestone payments based upon the successful achievement of pre-specified research, clinical, and regulatory milestones totaling up to $530.0 million plus royalty payments on product sales, if any. Kite will receive an exclusive, worldwide license to research, develop, and commercialize engineered autologous T cell therapies incorporating two programs coming from our platform.

On October 20, 2017, we entered into an amendment with Kite to extend the research term of the Collaboration Agreement. Under the amended agreement, we are eligible to receive an additional $450,000 research support payment from Kite in two tranches (instead of a single tranche as previously contemplated by the original Collaboration Agreement) (the “Amendment”). The Amendment also amended and restated the original research plan. We adjusted our estimated service period over the extended term and have adjusted the revenue recognition accordingly.

We recorded revenue of $1.7 million, $2.9 million and $492,000 for the years ended December 31, 2017, 2016 and 2015, respectively.

13. Convertible Preferred Stock

Between January 2015 and November 2015, we issued and sold 1,212,436 shares of Series Seed convertible preferred stock and received a total of $610,000. In April 2016, we issued and sold an additional 1,272,064 shares of Series Seed convertible preferred stock and received a total of $640,000.

In June 2016, the we issued and sold 1,827,270 shares of Series A convertible preferred stock and received $10.3 million. We incurred $48,000 of issuance costs related to the June 2016 issuance. In March 2017, we issued and sold 707,330 shares of Series A convertible preferred stock and received a total of $4.0 million. In April 2017, prior to the execution and delivery of the Merger Agreement certain holders of our Series A-1 convertible preferred stock purchased 2,947,211 shares

of Series A-1 preferred stock for $16.7 million in proceeds. Contemporaneously with the execution and delivery of the Merger Agreement certain of our pre-existing stockholders entered into a subscription agreement with us pursuant to which such stockholders purchased immediately prior to the closing of the merger 1,335,118 shares of our convertible preferred stock at a purchase price of $12.74 per share for an aggregate purchase price of approximately $17.0 million.

Upon the closing of the merger, all outstanding shares of our convertible preferred stock converted into 9,301,433 shares of common stock. As of December 31, 2017, we do not have any convertible preferred stock outstanding.

A summary of convertible preferred stock as of December 31, 2016 is as follows (amounts in thousands, except share and per share data):

	December 31, 2016				
	Issued Price per Share	Shares Authorized	Shares Issued and Outstanding	Aggregate Liquidation Preference	Carrying Value
Series Seed	$ 0.51	5,000,000	2,484,500	$ 1,250	$ 1,250
Series A	$ 5.66	17,081,852	1,827,270	10,333	10,285
Total		22,081,852	4,311,770	$ 11,583	$ 11,535

The convertible preferred stock had the following rights, preferences and privileges: full voting rights and powers as common stock on an as-converted basis, dividends at a rate of six percent of the original issue price per share per annum, rights and obligations to participate in future tranches, optional conversion features, mandatory conversion features, special conversion features and a liquidation preference of $5.66 per share plus any declared but unpaid dividends.

Preferred Stock Warrants

In connection with our drawdown of a term loan on June 30, 2017, we granted the lender 7,069 of fully vested Series A-1 preferred stock warrants at an exercise price of $12.38 per share and a term of ten years. The fair value of the warrants on the date of issuance was $53,000 and was recorded as a discount to the note and as a warrant liability within the accompanying consolidated balance sheets. The warrants were initially classified as a liability because the underlying to the warrants were puttable shares.

On July 24, 2017, in connection with the merger and conversion of all outstanding Series A-1 preferred stock, the warrants became exercisable for 7,069 fully vested shares of our common stock. As a result of the change in the underlying shares, the warrants were equity-classified beginning on July 24, 2017. As a result of the equity classification, the warrant liability was remeasured as of July 24, 2017 and the change in fair value was recognized within other (income) expense in our consolidated statements of operations and comprehensive income (loss) and the carrying value of the revised warrant liability was reclassified to additional paid-in capital within stockholders' deficit.

14. Stockholders' Deficit

Common Stock

We had 13,831,178 and 608,701 shares of common stock outstanding as of December 31, 2017 and 2016, respectively. Shares of common stock reserved for future issuance were as follows:

	December 31,	
	2017	2016
Shares to be issued upon conversion of convertible preferred stock	—	4,311,770
Shares to be issued upon exercise of outstanding stock options	1,611,996	520,739
Shares to be issued upon conversion of common stock warrants	24,123	12,422
Shares available for future stock grants	576,722	545,078
Shares to be issued under employee stock purchase plan	45,211	—
Shares of common stock reserved for future issuance	2,258,052	5,390,009

In December 2017, we repurchased 50,467 shares of unvested common stock issued to one of our former employees for the original purchase price of $0.002 per share.

Common Stock Warrants

In connection with our drawdown of a term loan on June 30, 2017, we granted the lender 7,069 of fully vested Series A-1 preferred stock warrants at an exercise price of $12.38 per share and a term of ten years. On July 24, 2017, in connection with the merger and conversion of all outstanding Series A-1 preferred stock, the warrants became exercisable for 7,069 fully vested shares of our common stock. Additionally, in connection with the merger, we assumed 4,632 fully vested warrants to purchase common stock at an exercise price of $97.12.

We have also issued common stock warrants on two occasions to certain non-employee professional advisers. On each occasion, the warrants were convertible into 12,422 shares of common stock. The warrants issued on April 24, 2015 had an exercise price of $0.11 per share, a vesting commencement date of October 1, 2014, and vested ratably over 24 months. These warrants were exercised in full on March 20, 2017. The warrants issued on April 12, 2017 have an exercise price of $5.02 per share, a vesting commencement date of March 29, 2017, and vest ratably over 48 months. Stock-based compensation expense related to these warrants is included in general and administrative expenses for all periods presented

Equity Incentive Plans

In July 2017, in connection with the merger, we assumed Nivalis' Employee Stock Purchase Plan (the ESPP). Upon assumption of the ESPP, there were 45,211 shares available for issuance under the ESPP. As of December 31, 2017, we have not activated the ESPP.

In July 2017, in connection with the merger, we assumed Nivalis' 2015 Equity Incentive Plan (the "2015 EIP"). The 2015 EIP provides for the granting of incentive and nonqualified stock options, stock appreciation rights, restricted stock, restricted stock units, performance-based awards and other stock-based awards to our employees, directors and consultants. Upon assumption of the 2015 EIP, a total of 658,275 shares of common stock were authorized for issuance. The 2015 EIP provides that an additional number of shares will automatically be added to the shares authorized for issuance under the 2015 EIP on January 1 of each calendar year, through January 1, 2025. The number of shares added each year will be equal to: (a) 5% of the total number of shares of common stock issued and outstanding on December 31 of the preceding calendar year; or (b) such lesser number of shares of common stock approved by the Board of Directors on or prior to such immediately preceding December 31. On January 1, 2018 a total of 691,558 additional shares were automatically added to the shares authorized for issuance under the 2015 EIP.

In February 2015, our board of directors approved the 2015 Stock Plan (the "2015 Plan") to provide incentive stock options and non-qualified stock options to employees, non-qualified stock options to members of the board of directors and advisory board, and non-employees. The terms of the stock awards, including vesting requirements, are determined by the board of directors, subject to the provisions of the 2015 Plan. Stock options granted under the 2015 Plan generally vest within four years and vested options are exercisable from the grant date until ten years after the date of grant. Vesting of certain employee options may be accelerated in the event of a change in control of the Company. We grant stock options to employees with exercise prices equal to the fair value of our common stock on the date of grant. The term of incentive stock options may not exceed ten years from the date of grant.

As of December 31, 2017, a total of 2,370,395 shares of common stock were authorized for issuance under our 2015 Plan and 2015 EIP, of which 576,722 shares were available for future grants.

A summary of stock option activity under our plans is presented below:

	Options Outstanding	Weighted-average Exercise Price	Weighted-average Remaining Contract Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2015	401,688	$ 0.42		
Granted	512,844	$ 0.53		
Exercised	(111,802)	$ 0.45		
Forfeited/Expired	(281,991)	$ 0.45		
Outstanding at December 31, 2016	520,739	$ 0.51	9.22	$ 179
Options assumed in the merger	421,992	$ 22.97		
Options assumed in the merger, expired during period	(253,194)	$ 30.66		
Granted	997,368	$ 4.94		
Exercised	(45,031)	$ 0.45		
Forfeited/Expired	(29,878)	$ 4.72		
Outstanding at December 31, 2017	1,611,996	$ 4.32	8.35	$ 11,525
Vested and expected to vest after December 31, 2017	1,611,996	$ 4.32	8.35	$ 11,525
Exercisable at December 31, 2017	377,550	$ 5.39	5.70	$ 2,600

As of December 31, 2017 there was $4.1 million of unrecognized stock-based compensation expense related to nonvested stock options that is expected to be recognized over a weighted-average period of 3.3 years. The aggregate intrinsic value of stock options exercised during the year ended December 31, 2017 was $18,000. The total fair value of shares vested during the year ended December 31, 2017 was $139,000.

Stock-Based Compensation Expense

We use the Black-Scholes option pricing model to estimate the fair value of stock options at the grant date. The Black-Scholes option pricing model requires us to make certain estimates and assumptions, including assumptions related to the expected price volatility of our stock, the period during which the options will be outstanding, the rate of return on risk-free investments, and the expected dividend yield of our stock. The fair values of stock options granted to employees were calculated using the following assumptions:

	Years Ended December 31,		
	2017	2016	2015
Weighted-average estimated fair value	$ 4.69	$ 0.42	$ 0.38
Risk-free interest rate (1)	1.90% - 2.26%	1.14% - 2.24%	1.79% - 2.24%
Expected term of options (in years) (2)	5.69 - 6.32	5.22 – 7.00	5.21 - 10.00
Expected stock price volatility (3)	72% - 83%	72% - 79%	70% - 85%
Expected dividend yield (4)	—%	—%	—%

(1) The risk-free interest rate assumption was based on zero-coupon U.S. Treasury instruments that had terms consistent with the expected term of our stock option grants.

(2) We used the “simplified method” for options to determine the expected term of stock option granted to employees. Under this approach, the weighted-average expected life is presumed to be the average of the vesting term and the contractual term of the option.

(3) Volatility is a measure of the amount by which a financial variable, such as share price, has fluctuated or is expected to fluctuate during a period. We analyzed the stock price volatility of companies at a similar stage of development to estimate expected volatility of our stock price.

(4) We have never declared or paid any cash dividends and do not presently plan to pay cash dividends in the foreseeable future.

The fair value of each non-employee stock option is estimated at the date of grant using the Black-Scholes option pricing model and are remeasured over the vesting term, as earned. Assumptions used in valuing non-employee stock options are generally consistent with those used for employee stock options with the exception that the expected term is over the contractual life.

Stock-based compensation expense is classified in the statements of operations as follows (amounts in thousands):

	Years Ended December 31,		
	2017	2016	2015
Employee:			
Research and development	$ 183	$ 14	$ —
General and administrative	588	53	10
Non-Employee:			
Research and development	52	5	2
General and administrative	15	5	4
Total stock-based compensation expense	$ 838	$ 77	$ 16

In May 2016 we extended the vesting period of 567,500 unvested share options held by 5 employees. As a result of this modification, we recognized additional compensation expense of $4,000 for the year ended December 31, 2016.

15. Income Taxes

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the “Tax Act”). The Tax Act incorporates broad and complex changes to the U.S. tax code. The main provision of the Tax Act that is applicable to us is the reduction of a maximum federal tax rate of 35% to a flat tax rate of 21%, effective January 1, 2018. We incorporated the change in federal tax rates in our annual tax provision. As a result of the rate change, we reduced our net deferred tax asset balance by $2.0 million, with a corresponding reduction to our valuation allowance of $2.2 million, resulting in a deferred income tax benefit of $200,000. At December 31, 2017, we have not completed accounting for the tax effects of Tax Act. We have made reasonable estimates of the effects of the Tax Act on existing deferred tax balances. We will continue to refine our calculations as additional analysis is completed. Our estimates may be affected as we gain a more thorough understanding of the Tax Act.

Our entire income (loss) before taxes is considered domestic (United States) as we have no foreign operations.

We received $5.5 million in advanced payments from Kite in 2015. As of December 31, 2016, $2.0 million of this $5.5 million was deferred for financial reporting purposes but was included in taxable income for the year ended December 31, 2016. As a result of this timing difference, we incurred current federal and state income tax expense in the year ended December 31, 2016. We expect to be in a loss position for tax purposes in 2017 and thereafter for the foreseeable future.

The provision for income taxes is composed of the following (in thousands):

	Years Ended December 31,	
	2017	2016
Current:		
U.S. - Federal	$ (1)	$ 4
U.S. - State	5	62
Total current	4	66
Deferred:		
U.S. - Federal	(204)	—
U.S. - State	—	—
Total deferred	(204)	—
Total income tax expense	$ (200)	$ 66

The effective tax rate of the provision for income taxes differs from the federal statutory rate as follows:

	Years Ended December 31,	
	2017	2016
U.S. Statutory rate	35.0%	34.0%
Effect of:		
State taxes (net of federal benefit)	(1.6%)	5.6%
Permanent differences	(0.1%)	(0.3%)
Federal research and development credit	4.4%	9.4%
Change in valuation allowance	(19.4%)	(54.0%)
Benefit of a lower tax rate	0.2%	0.9%
Stock-based compensation	(2.6%)	(1.2%)
Non-deductible merger costs	(17.6%)	(—%)
Bargain purchase gain	28.9%	(—%)
Tax rate change	(24.7%)	(—%)
Effective income tax rate	2.5%	(5.6%)

We recorded a tax benefit of $200,000 for the year ended December 31, 2017 and tax expense of $66,000 for the year ended December 31, 2016, representing effective tax rates of 2.5% and (5.6)% for the years ended December 31, 2017 and 2016, respectively. The difference between the U.S. federal statutory tax rate of 35% and our effective tax rate in all periods is primarily due to a full valuation allowance related to our deferred tax assets, the generation, and consumption of, federal R&D tax credits, and, specific to 2017, a change in future federal income tax rates due to tax reform, non-deductible transaction costs, and the non-taxable bargain purchase gain recorded on the Nivalis merger.

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 following table represents the significant components of our deferred tax assets and liabilities for the periods presented (in thousands):

	December 31,	
	2017	2016
Deferred tax assets:		
Net operating loss	$ 2,475	$ —
Deferred compensation	—	24
Research and development credits	458	103
Intangible asset basis	—	16
Deferred revenue	58	800
Deferred rent	24	58
Stock based compensation	810	3
Other	12	—
Gross deferred tax assets	3,837	1,004
Valuation allowance	(3,722)	(786)
Total deferred tax assets, net of valuation allowance	115	218
Deferred tax liabilities:		
Prepaid expenses	(63)	(12)
Fixed asset basis	(110)	(206)
Intangible asset basis	(247)	
Total deferred tax liability	(420)	(218)
Net deferred tax assets and liabilities	$ (305)	$ —

As part of the merger with Nivalis, we identified $1.5 million of acquired IPR&D. IPR&D acquired in a business combination is an indefinite-lived intangible asset until the completion or abandonment of the associated R&D efforts. Once the R&D efforts are completed or abandoned, the IPR&D will either be impaired or amortized over the asset life as a finite-lived intangible.

As the acquired IPR&D is not completed, and has not been abandoned, it is considered indefinite-lived for accounting purposes. Any future reversal of a deferred tax liability resulting from IPR&D costs cannot be scheduled for tax purposes and therefore cannot be considered as a source of future taxable income. Thus, we have recorded a deferred tax liability of $305,000 as a result of the acquired IPR&D having a financial reporting basis of $1.5 million and a tax basis of zero.

A valuation allowance is provided for deferred tax assets where the recoverability of the assets is uncertain. The determination to provide a valuation allowance is dependent upon the assessment of whether it is more likely than not that sufficient taxable income will be generated to utilize the deferred tax assets. Based on the weight of the available evidence, which includes our historical operating losses, uncertainty of future taxable income, and the accumulated deficit, we provided a full valuation allowance against our deferred tax assets. The valuation allowance increased by $2.9 million and $629,000 during the year ended December 31, 2017 and December 31, 2016, respectively.

We have net operating loss carryforwards as follows (in thousands):

	December 31,	
	2017	2016
Federal	$ 11,784	$ —

Federal and state net operating loss carryforwards would begin to expire in 2037.

We have net research and development tax credit carryforwards as follows (in thousands):

	December 31,	
	2017	2016
Federal	$ 458	$ 103

Federal research and development tax credit carryforwards begin to expire in 2035.

Current tax laws impose substantial restrictions on the utilization of R&D credit and net operating loss carryforwards in the event of an ownership change, as defined by the Internal Revenue Code Section 382 and 383. Such an event may limit our ability to utilize our net operating losses and R&D tax credit carryforwards. Under Internal Revenue Code Section 382 and 383, the Q3 2017 merger with Nivalis is likely considered an ownership change with respect to the potential limitation of the Nivalis federal tax credits and net operating losses. As such, it is likely that any future utilization of Nivalis federal tax credits and net operating losses is substantially limited.

Therefore, as of December 31, 2017, all Nivalis tax credit and net operating loss carryforwards have been reduced to zero.

We account for uncertainty in income taxes in accordance with ASC 740. Tax positions are evaluated in a two-step process, whereby we first determine whether it is more likely than not that a tax position will be sustained upon examination by the tax authority, including resolutions of any related appeals or litigation processes, based on technical merit. If a tax position meets the more-likely-than-not recognition threshold it is then measured to determine the amount of benefit to recognize in the financial statements. The tax position is measured as the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement.

The following table summarized the activity related to unrecognized tax benefits (in thousands):

	December 31,	
	2017	2016
Unrecognized benefits – beginning of year	$ 34	$ 7
Gross decreases – prior year tax positions	(4)	—
Gross increases – current year tax positions	84	27
Unrecognized benefit – end of year	$ 114	$ 34

All of the unrecognized tax benefits as of December 31, 2017 are accounted for as a reduction in our deferred tax assets. Due to our valuation allowance, none of the $114,000 of unrecognized tax benefits would affect our effective tax rate,

if recognized. We do not believe it is reasonably possible that our unrecognized tax benefits will significantly change in the next twelve months.

We recognize interest and penalties related to unrecognized tax benefits as income tax expense. There were no accrued interest or penalties related to unrecognized tax benefits for 2017 and 2016.

We do not expect any significant change in our unrecognized tax benefits during the next twelve months.

Our material income tax jurisdictions are the United States (federal), and California (state). We are subject to audit for tax years 2012 and forward for federal purposes, and 2015 and forward for California.

16. Related Party Transactions

We have a shared services agreement with Alpine BioVentures GP, LLC, pursuant to which we incurred costs of $0, $17,000 and $47,000 years ended December 31, 2017, 2016 and 2015, respectively. We had an accrual of $5,000 related to the shared services agreement at December 31, 2016, which was paid in April 2017.

17. 401(k) Retirement Plan

We have adopted a 401(k) plan. To date, we have not matched employee contributions to the plan. All employees are eligible to participate, provided they meet the requirements of the plan.

Exhibit 3.1

CERTIFICATE OF AMENDMENT

TO THE

AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF

NIVALIS THERAPEUTICS, INC.

Nivalis Therapeutics, Inc. (the "*Corporation*"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, as amended (the "*DGCL*"), hereby certifies as follows:

A. The name of the Corporation is Nivalis Therapeutics, Inc. The predecessor to the Corporation, N30 Pharmaceuticals, LLC, was originally formed as a limited liability company under Section 18-201 of the Delaware Limited Liability Company Act on March 30, 2007. Effective as of 12:01 a.m. Eastern Time on August 1, 2012, the Corporation's predecessor was converted into a Delaware corporation pursuant to a Certificate of Conversion filed with the Secretary of State of the State of Delaware on July 31, 2012. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on July 31, 2012 under the name N30 Pharmaceuticals, Inc. On February 11, 2015, the Corporation changed its name from N30 Pharmaceuticals, Inc. to Nivalis Therapeutics, Inc.

B. This Certificate of Amendment to the Amended and Restated Certificate of Incorporation (the "*Certificate of Amendment*") amends the Corporation's Amended and Restated Certificate of Incorporation filed with the Secretary of State of the State of Delaware on June 22, 2015 (the "*Prior Certificate*"), and has been duly adopted by the Corporation's Board of Directors and stockholders in accordance with the provisions of Sections 242 and 228 of the DGCL.

C. Article IV of the Prior Certificate is hereby amended to add the following Section D:

"D. Immediately upon the filing of this Certificate of Amendment of Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware each one (1) share of Common Stock outstanding immediately prior to such filing shall be automatically reclassified into one-fourth (1/4) of one share of Common Stock. The aforementioned reclassification shall be referred to collectively as the "**Reverse Split.**"

The Reverse Split shall occur without any further action on the part of the Corporation or stockholders of the Corporation and whether or not certificates representing such stockholders' shares prior to the Reverse Split are surrendered for cancellation. No fractional interest in a share of Common Stock shall be deliverable upon the Reverse Split. All shares of Common Stock (including fractions thereof) issuable upon the Reverse Split held by a holder prior to the Reverse Split shall be aggregated for purposes of determining whether the Reverse Split would result in the issuance of any fractional share. Any fractional share resulting from such aggregation upon the Reverse Split shall be rounded down to the nearest whole number. Each holder who would otherwise be entitled to a fraction of a share of Common Stock upon the Reverse Split (after aggregating all fractions of a share to which such stockholder would otherwise be entitled) shall, in lieu thereof, be entitled to receive a cash payment in an amount equal to the fraction to which the stockholder would otherwise be entitled multiplied by the closing price of the Corporation's Common Stock as reported on The NASDAQ Global Market on the trading day immediately preceding the filing of this Certificate of Amendment

of Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware. The Corporation shall not be obliged to issue certificates evidencing the shares of Common Stock outstanding as a result of the Reverse Split unless and until the certificates evidencing the shares held by a holder prior to the Reverse Split are either delivered to the Corporation or its transfer agent, or the holder notifies the Corporation or its transfer agent that such certificates have been lost, stolen or destroyed and executes an agreement satisfactory to the Corporation to indemnify the Corporation from any loss incurred by it in connection with such certificates."

D. The Certificate of Amendment of the Prior Certificate so adopted reads in full as set forth above and is hereby incorporated by reference. All other provisions of the Prior Certificate remain in full force and effect.

IN WITNESS WHEREOF, Nivalis Therapeutics, Inc. has caused this Certificate of Amendment to be signed by Michael Carruthers, a duly authorized officer of the Corporation, on July 24, 2017.

NIVALIS THERAPEUTICS, INC.

By: /s/ R. Michael Carruthers
Name: R. Michael Carruthers
Title: Interim President and Chief Financial Officer

CERTIFICATE OF AMENDMENT

TO THE

AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF

NIVALIS THERAPEUTICS, INC.

Nivalis Therapeutics, Inc. (the "***Corporation***"), a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, as amended (the "***DGCL***"), hereby certifies as follows:

A. The name of the Corporation is Nivalis Therapeutics, Inc. The predecessor to the Corporation, N30 Pharmaceuticals, LLC, was originally formed as a limited liability company under Section 18-201 of the Delaware Limited Liability Company Act on March 30, 2007. Effective as of 12:01 a.m. Eastern Time on August 1, 2012, the Corporation's predecessor was converted into a Delaware corporation pursuant to a Certificate of Conversion filed with the Secretary of State of the State of Delaware on July 31, 2012. The Corporation's original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on July 31, 2012 under the name N30 Pharmaceuticals, Inc. On February 11, 2015, the Corporation changed its name from N30 Pharmaceuticals, Inc. to Nivalis Therapeutics, Inc.

B. This Certificate of Amendment to the Amended and Restated Certificate of Incorporation (the "***Certificate of Amendment***") amends the Corporation's Amended and Restated Certificate of Incorporation filed with the Secretary of State of the State of Delaware on June 22, 2015 (the "***Prior Certificate***"), and has been duly adopted by the Corporation's Board of Directors and stockholders in accordance with the provisions of Sections 242 and 228 of the DGCL.

C. Article I of the Prior Certificate is hereby amended and restated to read as follows:

"ARTICLE I

The name of the corporation is Alpine Immune Sciences, Inc. (the "***Corporation***")."

D. The Certificate of Amendment of the Prior Certificate so adopted reads in full as set forth above and is hereby incorporated by reference. All other provisions of the Prior Certificate remain in full force and effect.

IN WITNESS WHEREOF, Nivalis Therapeutics, Inc. has caused this Certificate of Amendment to be signed by Mitchell H. Gold, M.D., a duly authorized officer of the Corporation, on July 24, 2017.

NIVALIS THERAPEUTICS, INC.

By: /s/ Mitchell H. Gold
Name: Mitchell H. Gold, M.D.
Title: Chief Executive Officer

AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
NIVALIS THERAPEUTICS, INC.

(Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware)

Nivalis Therapeutics, Inc. (the "**Corporation**"), a corporation organized and existing under the General Corporation Law of the State of Delaware, as amended (the "**DGCL**"),

DOES HEREBY CERTIFY:

1. The name of the Corporation is Nivalis Therapeutics, Inc. The predecessor to the Corporation, N30 Pharmaceuticals, LLC, was originally formed as a limited liability company under Section 18-201 of the Delaware Limited Liability Company Act on March 30, 2007. Effective as of 12:01 a.m. Eastern Standard Time on August 1, 2012, the Corporation's predecessor was converted into a Delaware corporation pursuant to a Certificate of Conversion filed with the Delaware Secretary of State on July 31, 2012. The Corporation's original Certificate of Incorporation was filed with the Delaware Secretary of State on July 31, 2012 under the name N30 Pharmaceuticals, Inc. On February 11, 2015, the Corporation changed its name from N30 Pharmaceuticals, Inc. to Nivalis Therapeutics, Inc.

2. This Amended and Restated Certificate of Incorporation (the "**Amended and Restated Certificate of Incorporation**") amends and restates the Corporation's Amended and Restated Certificate of Incorporation filed with the Secretary of State of the State of Delaware on February 9, 2015, as amended by the Certificate of Amendment of Amended and Restated Certificate of Incorporation filed with the Secretary of State of the State of Delaware on February 11, 2015 (the "**Prior Certificate**"), and has been duly adopted in accordance with the provisions of Sections 242, 245 and 228 of the DGCL.

3. The text of the Prior Certificate is hereby amended and restated in its entirety to read as set forth in Exhibit A attached hereto.

IN WITNESS WHEREOF, this Amended and Restated Certificate of Incorporation has been executed by a duly authorized officer of this Corporation on this 19th day of June, 2015.

By: /s/ Jon Congleton
Jon Congleton, Chief Executive Officer

EXHIBIT A

ARTICLE I

The name of this Corporation is Nivalis Therapeutics, Inc.

ARTICLE II

The address of the registered office of the Corporation in the State of Delaware is 615 South DuPont Highway, Dover, County of Kent, Delaware 19901. The name of its registered agent at such address is National Corporate Research, LTD.

ARTICLE III

The nature of the business or purposes to be conducted or promoted is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

A. The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 200,000,000 shares of Common Stock, $0.001 par value per share ("**Common Stock**"), and (ii) 10,000,000 shares of Preferred Stock, $0.001 par value per share ("**Preferred Stock**").

B. The Preferred Stock may be issued from time to time in one or more series. The Board of Directors of the Company (the "**Board**") is hereby expressly authorized, by filing a certificate ("**Certificate of Designation**") pursuant to the DGCL, to provide for the issue of any or all of the unissued and undesignated shares of the Preferred Stock in one or more series, and to fix the number of shares and to determine or alter for each such series, such voting powers, full or limited, or no voting powers, and such designation, preferences and relative, participating, optional, or other rights and such qualifications, limitations or restrictions thereof as shall be stated and expressed in the resolution or resolutions adopted by the Board providing for the issuance of such shares and as may be permitted by the DGCL. The Board of Directors is also expressly authorized to increase or decrease the number of shares of any series subsequent to the issuance of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be decreased in accordance with the foregoing sentence, the shares constituting such decrease shall resume the status that they had prior to the adoption of the resolution originally fixing the number of shares of such series. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the stock of the Company entitled to vote thereon, without a separate vote of the holders of the Preferred Stock, or of any series thereof, unless a vote of any such holders is required pursuant to the terms of any certificate of designation filed with respect to any series of Preferred Stock.

C. Each outstanding share of Common Stock shall entitle the holder thereof to one vote on each matter properly submitted to the stockholders of the Company for their vote; *provided, however*, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Amended and Restated Certificate of Incorporation (this "**Certificate of Incorporation**") (including any Certificate of Designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series of Preferred Stock are entitled, either separately or together as a class with the holders of one or more other series of Preferred Stock, to vote thereon by law or pursuant to this Certificate of Incorporation (including any Certificate of Designation filed with respect to any series of Preferred Stock).

ARTICLE V

In furtherance and not in limitation of the powers conferred by the DGCL, subject to the rights of the holders of any series of Preferred Stock that may be designated from time to time, the Board is expressly authorized to adopt, amend or repeal the bylaws of the Corporation (the "**Bylaws**"), subject to the power of the stockholders of the Corporation to alter or repeal any Bylaws whether adopted by them or otherwise; *provided*, *however*, that, in addition to any vote of the holders of any class or series of stock of the Corporation required by law or by this Certificate of Incorporation (including any Certificate of Designation that may be filed from time to time), the affirmative vote of holders of not less than sixty-six and two-thirds percent (66 2/3%) of the votes of all outstanding shares of capital stock of the Corporation entitled to vote generally in the election of directors, considered for purposes hereof as a single class, shall be required for the stockholders to adopt new Bylaws or to alter, amend or repeal the Bylaws.

ARTICLE VI

A. The management of the business and the conduct of the affairs of the Corporation shall be vested in the Board. The number of directors which shall constitute the whole Board shall be fixed exclusively by one or more resolutions adopted from time to time by the Board.

B. The directors shall be divided into three classes, designated as Class I, Class II and Class III, as nearly equal in number as possible. Directors shall be assigned to each class in accordance with a resolution or resolutions adopted by the Board. At the first annual meeting of stockholders following the effectiveness of this Certificate of Incorporation (the "**Qualifying Record Date**"), the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the Qualifying Record Date, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the Qualifying Record Date, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting. Notwithstanding the foregoing provisions of this Article VI.B., each director shall serve until his or her successor is duly elected and qualified, or until his or her earlier death, resignation or removal. No decrease in the number of directors constituting the Board shall shorten the term of any incumbent director.

C. The Board or any individual director may be removed from office only for cause at a meeting of stockholders called for that purpose, by the affirmative vote of the holders of at least at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all the then outstanding shares of voting stock of the Corporation entitled to vote at an election of directors, voting together as a single class.

D. Any vacancies on the Board resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors shall, unless the Board determines by resolution that any such vacancies or newly created directorships shall be filled by the stockholders, except as otherwise provided by law and or by this Certificate of Incorporation or any Certificate of Designation that may be filed with respect to a series of Preferred Stock, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified.

E. The directors of the Corporation need not be elected by written ballot unless the Bylaws so provide.

F. There shall be no cumulative voting in the election of directors.

ARTICLE VII

A. Subject to the rights of the holders of any series of Preferred Stock or any other class of stock or series thereof having a preference over the Common Stock as to dividends or upon liquidation, any action required or permitted to be taken by the stockholders of the Corporation must be effected at a duly called annual or special meeting of the stockholders of the Corporation. The taking of any action by written consent of the stockholders in lieu of a meeting of the stockholders is specifically denied.

B. Special meetings of the stockholders of the Corporation may be called, for any purpose or purposes, by the Secretary of the Corporation at the direction of the Board, pursuant to a resolution adopted by a majority of the entire Board, but such special meetings may not be called by any other person or persons.

C. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Corporation shall be given in the manner provided in the Bylaws of the Corporation.

ARTICLE VIII

A. To the fullest extent permitted by the DGCL, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL is amended after approval by the stockholders of this Article VIII to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL as so amended.

B. Any repeal or modification of the foregoing provisions of this Article VIII shall not adversely affect any right or protection of a director of the Corporation existing at the time of, or increase the liability of any director of the Corporation with respect to any acts or omissions of such director occurring prior to, such repeal or modification.

ARTICLE IX

Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for (a) any derivative action or proceeding brought on behalf of the Corporation, (b) any action asserting a claim of breach of a fiduciary duty owed by any director, officer, employee or agent of the Corporation to the Corporation or the Corporation's stockholders, (c) any action asserting a claim arising pursuant to any provision of the DGCL, this Certificate of Incorporation or the Bylaws, or (d) any action asserting a claim that is governed by the internal affairs doctrine, in each such case subject to the Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein and the claim not being one which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery or for which the Court of Chancery does not have subject matter jurisdiction. Any person purchasing or otherwise acquiring any interest in any shares of the Corporation's capital stock shall be deemed to have notice of, and to have consented to the provisions of this Article IX.

ARTICLE X

Notwithstanding any other provisions of this Certificate of Incorporation or any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any particular class or series of the Corporation required by law or by this Certificate of Incorporation or any Certificate of Designation that may be filed with respect to a series of Preferred Stock, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all of the then-outstanding shares of capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to alter, amend or repeal Articles VI, VII, VIII, IX and this Article X.

***

Exhibit 4.1

Number CS- *** * Shares**

Common Stock

ALPINE IMMUNE SCIENCES, INC
a Delaware Corporation
Incorporated on July 21, 2012

Common Stock
Par Value: $0.001

THIS CERTIFIES THAT is the record holder of **( )** shares of **Common Stock** of **Alpine Immune Sciences, Inc.**, a Delaware corporation (the "Corporation"), transferable only on the books of the Corporation by the holder, in person, or by duly authorized attorney, upon surrender of this certificate properly endorsed or assigned.

This certificate and the shares represented hereby are issued and shall be held subject to all the provisions of the Certificate of Incorporation and the Bylaws of the Corporation and any amendments thereto, all of which the holder of this certificate, by acceptance hereof, assents.

A statement of all of the rights, preferences, privileges and restrictions granted to or imposed upon the respective classes or series of stock of the Corporation and upon the holders thereof may be obtained by any stockholder without charge upon request delivered to the secretary of the Corporation at the principal office of the Corporation.

IN WITNESS WHEREOF, the Corporation has caused this certificate to be signed by its duly authorized officers this day of, 2015.

President

Secretary

FOR VALUE RECEIVED HEREBY SELLS, ASSIGNS AND TRANSFERS UNTO SHARES REPRESENTED BY THE WITHIN CERTIFICATE AND DOES HEREBY IRREVOCABLY CONSTITUTE AND APPOINT ATTORNEY TO TRANSFER THE SAID SHARES ON THE SHARE REGISTER OF THE WITHIN NAMED CORPORATION WITH FULL POWER OF SUBSTITUTION IN THE PREMISES.

DATED _____

_____
(Signature)

NOTICE: THE SIGNATURE ON THIS ASSIGNMENT MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THIS CERTIFICATE, IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT, OR ANY CHANGE WHATEVER.

Exhibit 4.5

THIS WARRANT AND THE SHARES ISSUABLE HEREUNDER HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN SECTIONS 5.3 AND 5.4 BELOW, MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE COMPANY, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

WARRANT TO PURCHASE STOCK

Company:	ALPINE IMMUNE SCIENCES, INC., a Delaware corporation
Number of Shares:	That number of Shares which Holder is entitled to purchase pursuant to Section 1.7.
Type/Series of Stock:	Series A-1 Preferred
Warrant Price:	$2.81 per share
Issue Date:	December 16, 2016
Expiration Date:	December 16, 2026 **See also Section 5.1(b).**
Credit Facility:	This Warrant to Purchase Stock (as the same may from time to time be amended, modified, supplemented or restated, the "**Warrant**") is issued in connection with that certain Loan and Security Agreement of even date herewith between Silicon Valley Bank and the Company (as the same may from time to time be amended, modified, supplemented or restated, the "**Loan Agreement**").

THIS WARRANT CERTIFIES THAT, for good and valuable consideration, SILICON VALLEY BANK (together with any successor or permitted assignee or transferee of this Warrant or of any shares issued upon exercise hereof, "**Holder**") is entitled to purchase the number of fully paid and non-assessable shares (the "**Shares**") of the above-stated Type/Series of Stock (the "**Class**") of the above-named company (the "**Company**") at the above-stated Warrant Price, all as set forth above and as adjusted pursuant to Section 2 of this Warrant, subject to the provisions and upon the terms and conditions set forth in this Warrant. Reference is made to Section 5.4 of this Warrant whereby Silicon Valley Bank shall transfer this Warrant to its parent company, SVB Financial Group.

SECTION 1. EXERCISE.

1.1 Method of Exercise. Holder may at any time and from time to time exercise this Warrant, in whole or in part, by delivering to the Company the original of this Warrant together with a duly executed Notice of Exercise in substantially the form attached hereto as Appendix 1 and, unless Holder is exercising this Warrant pursuant to a cashless exercise set forth in Section 1.2, a check, wire transfer of same-day funds (to an account designated by the Company), or other form of payment acceptable to the Company for the aggregate Warrant Price for the Shares being purchased.

1.2 Cashless Exercise. On any exercise of this Warrant, in lieu of payment of the aggregate Warrant Price in the manner as specified in Section 1.1 above, but otherwise in accordance with the requirements of Section 1.1, Holder may elect to receive Shares equal to the value of this Warrant, or portion hereof as to which this Warrant is being exercised. Thereupon, the Company shall issue to the Holder such number of fully paid and non-assessable Shares as are computed using the following formula:

$$X = Y(A-B)/A$$

where:

X = the number of Shares to be issued to the Holder;

Y = the number of Shares with respect to which this Warrant is being exercised (inclusive of the Shares surrendered to the Company in payment of the aggregate Warrant Price);

A = the Fair Market Value (as determined pursuant to Section 1.3 below) of one Share; and

B = the Warrant Price.

1.3 Fair Market Value. If the Company's common stock is then traded or quoted on a nationally recognized securities exchange, inter-dealer quotation system or over-the-counter market (a "**Trading Market**") and the Class is common stock, the fair market value of a Share shall be the closing price or last sale price of a share of common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company. If the Company's common stock is then traded in a Trading Market and the Class is a series of the Company's convertible preferred stock, the fair market value of a Share shall be the closing price or last sale price of a share of the Company's common stock reported for the Business Day immediately before the date on which Holder delivers this Warrant together with its Notice of Exercise to the Company multiplied by the number of shares of the Company's common stock into which a Share is then convertible. If the Company's common stock is not traded in a Trading Market, the Board of Directors of the Company shall determine the fair market value of a Share in its reasonable good faith judgment.

1.4 Delivery of Certificate and New Warrant. Within a reasonable time after Holder exercises this Warrant in the manner set forth in Section 1.1 or 1.2 above, the Company shall deliver to Holder a certificate representing the Shares issued to Holder upon such exercise and, if this Warrant has not been fully exercised and has not expired, a new warrant of like tenor representing the Shares not so acquired.

1.5 Replacement of Warrant. On receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and, in the case of loss, theft or destruction, on delivery of an indemnity agreement reasonably satisfactory in form, substance and amount to the Company or, in the case of mutilation, on surrender of this Warrant to the Company for cancellation, the Company shall, within a reasonable time, execute and deliver to Holder, in lieu of this Warrant, a new warrant of like tenor and amount.

1.6 Treatment of Warrant Upon Acquisition of Company.

(a) Acquisition. For the purpose of this Warrant, "**Acquisition**" means any transaction or series of related transactions involving: (i) the sale, lease, exclusive license, or other disposition of all or substantially all of the assets of the Company (ii) any merger or consolidation of the Company into or with another person or entity (other than a merger or consolidation effected exclusively to change the Company's domicile), or any other corporate reorganization, in which the stockholders of the Company in their capacity as such immediately prior to such merger, consolidation or reorganization, own less than a majority of the Company's (or the surviving or successor entity's) outstanding voting power immediately after such merger, consolidation or reorganization; or (iii) any sale or other transfer by the stockholders of the Company of shares representing at least a majority of the Company's then-total outstanding combined voting power.

(b) Treatment of Warrant at Acquisition. In the event of an Acquisition in which the consideration to be received by the Company's stockholders consists solely of cash, solely of Marketable Securities or a combination of cash and Marketable Securities (a "**Cash/Public Acquisition**"), and the fair market value of one Share as determined in accordance with Section 1.3 above would be greater than the Warrant Price in effect on such date immediately prior to such Cash/Public Acquisition, and Holder has not exercised this Warrant pursuant to Section 1.1 above as to all Shares, then this Warrant shall automatically be deemed to be Cashless Exercised pursuant to Section 1.2 above as to all Shares effective immediately prior to and contingent upon the consummation of a Cash/Public Acquisition. In connection with such Cashless Exercise, Holder shall be deemed to have restated each of the representations and warranties in Section 4 of the Warrant as the date thereof and the Company shall promptly notify the Holder of the number of Shares (or such other securities) issued upon exercise. In the event of a Cash/Public Acquisition where the fair market value of one Share as determined in accordance with Section 1.3 above would be less than the Warrant Price in effect immediately prior to such Cash/Public Acquisition, then this Warrant will expire immediately prior to the consummation of such Cash/Public Acquisition.

(c) Upon the closing of any Acquisition other than a Cash/Public Acquisition defined above, the acquiring, surviving or successor entity shall assume the obligations of this Warrant, and this Warrant shall thereafter be exercisable for the same securities and/or other property as would have been paid for the Shares issuable upon exercise of the unexercised portion of this Warrant as if such Shares were outstanding on and as of the closing of such Acquisition, subject to further adjustment from time to time in accordance with the provisions of this Warrant.

(d) As used in this Warrant, "**Marketable Securities**" means securities meeting all of the following requirements: (i) the issuer thereof is then subject to the reporting requirements of Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and is then current in its filing of all required reports and other information under the Act and the Exchange Act; (ii) the class and series of shares or other security of the issuer that would be received by Holder in connection with the Acquisition were Holder to exercise this Warrant on or prior to the closing thereof is then traded in Trading Market, and (iii) following the closing of such Acquisition, Holder would not be restricted from

publicly re-selling all of the issuer's shares and/or other securities that would be received by Holder in such Acquisition were Holder to exercise or convert this Warrant in full on or prior to the closing of such Acquisition, except to the extent that any such restriction (x) arises solely under federal or state securities laws, rules or regulations, and (y) does not extend beyond six (6) months from the closing of such Acquisition.

1.7 Number of Shares Granted to Holder. On the Funding Date of each Term Loan Advance, the Company shall be deemed to have automatically granted to Holder the right to purchase, at an exercise price per share equal to the Warrant Price, that number of Shares equal to one and three-quarters of one percent (1.75%) of the original principal amount of such Term Loan Advance divided by the Warrant Price. For purposes of clarification only, if the aggregate original principal amount of the Term Loan Advances advanced to the Company is $3,000,000, then Holder shall automatically be deemed to have been granted the right to purchase 18,683 Shares (*i.e.*, 0.0175 multiplied by $3,000,000, then divided by the Warrant Price). Capitalized terms used but not defined in this Section 1.7 shall have the meanings given to them in the Loan Agreement.

SECTION 2. ADJUSTMENTS TO THE SHARES AND WARRANT PRICE.

2.1 Stock Dividends, Splits, Etc. If the Company declares or pays a dividend or distribution on the outstanding shares of the Class payable in common stock or other securities or property (other than cash), then upon exercise of this Warrant, for each Share acquired, Holder shall receive, without additional cost to Holder, the total number and kind of securities and property which Holder would have received had Holder owned the Shares of record as of the date the dividend or distribution occurred. If the Company subdivides the outstanding shares of the Class by reclassification or otherwise into a greater number of shares, the number of Shares purchasable hereunder shall be proportionately increased and the Warrant Price shall be proportionately decreased. If the outstanding shares of the Class are combined or consolidated, by reclassification or otherwise, into a lesser number of shares, the Warrant Price shall be proportionately increased and the number of Shares shall be proportionately decreased.

2.2 Reclassification, Exchange, Combinations or Substitution. Upon any event whereby all of the outstanding shares of the Class are reclassified, exchanged, combined, substituted, or replaced for, into, with or by Company securities of a different class and/or series, then from and after the consummation of such event, this Warrant will be exercisable for the number, class and series of Company securities that Holder would have received had the Shares been outstanding on and as of the consummation of such event, and subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant. The provisions of this Section 2.2 shall similarly apply to successive reclassifications, exchanges, combinations substitutions, replacements or other similar events.

2.3 Conversion of Preferred Stock. If the Class is a class and series of the Company's convertible preferred stock, in the event that all outstanding shares of the Class are converted, automatically or by action of the holders thereof, into common stock pursuant to the provisions of the Company's Certificate of Incorporation, including, without limitation, in connection with the Company's initial, underwritten public offering and sale of its common stock pursuant to an effective registration statement under the Act (the "**IPO**"), then from and after the date on which

all outstanding shares of the Class have been so converted, this Warrant shall be exercisable for such number of shares of common stock into which the Shares would have been converted had the Shares been outstanding on the date of such conversion, and the Warrant Price shall equal the Warrant Price in effect as of immediately prior to such conversion divided by the number of shares of common stock into which one Share would have been converted, all subject to further adjustment thereafter from time to time in accordance with the provisions of this Warrant.

2.4 Adjustments for Diluting Issuances. Without duplication of any adjustment otherwise provided for in this Section 2, the number of shares of common stock issuable upon conversion of the Shares shall be subject to anti-dilution adjustment from time to time in the manner set forth in the Company's Articles or Certificate of Incorporation as if the Shares were issued and outstanding on and as of the date of any such required adjustment, if any.

2.5 No Fractional Share. No fractional Share shall be issuable upon exercise of this Warrant and the number of Shares to be issued shall be rounded down to the nearest whole Share. If a fractional Share interest arises upon any exercise of the Warrant, the Company shall eliminate such fractional Share interest by paying Holder in cash the amount computed by multiplying the fractional interest by (i) the fair market value (as determined in accordance with Section 1.3 above) of a full Share, less (ii) the then-effective Warrant Price.

2.6 Notice/Certificate as to Adjustments. Upon each adjustment of the Warrant Price, Class and/or number of Shares, the Company, at the Company's expense, shall notify Holder in writing within a reasonable time setting forth the adjustments to the Warrant Price, Class and/or number of Shares and facts upon which such adjustment is based. The Company shall, upon written request from Holder, furnish Holder with a certificate of its Chief Financial Officer, including computations of such adjustment and the Warrant Price, Class and number of Shares in effect upon the date of such adjustment.

SECTION 3. REPRESENTATIONS AND COVENANTS OF THE COMPANY.

3.1 Representations and Warranties. The Company represents and warrants to, and agrees with, the Holder as follows:

(a) The initial Warrant Price referenced on the first page of this Warrant is not greater than the price per share at which shares of the Class were last sold and issued prior to the Issue Date hereof in an arms-length transaction in which at least $500,000 of such shares were sold.

(b) All Shares which may be issued upon the exercise of this Warrant, and all securities, if any, issuable upon conversion of the Shares, shall, upon issuance, be duly authorized, validly issued, fully paid and non-assessable, and free of any liens and encumbrances except for restrictions on transfer provided for herein or under applicable federal and state securities laws. The Company covenants that it shall at all times cause to be reserved and kept available out of its authorized and unissued capital stock such number of shares of the Class, common stock and other securities as will be sufficient to permit the exercise in full of this Warrant and the conversion of the Shares into common stock or such other securities.

(c) The Company's capitalization table attached hereto as Schedule 1 is true and complete, in all material respects, as of the Issue Date.

3.2 Notice of Certain Events. If the Company proposes at any time to:

(a) declare any dividend or distribution upon the outstanding shares of the Class or common stock, whether in cash, property, stock, or other securities and whether or not a regular cash dividend;

(b) offer for subscription or sale pro rata to the holders of the outstanding shares of the Class any additional shares of any class or series of the Company's stock (other than pursuant to contractual pre-emptive rights, including, but not limited to, in connection with the "Second Tranche Closing" or "Third Tranche Closing," each as defined in that certain Alpine Immune Sciences, Inc., Series A Preferred Stock Purchase Agreement dated June 10, 2016);

(c) effect any reclassification, exchange, combination, substitution, reorganization or recapitalization of the outstanding shares of the Class;

(d) effect an Acquisition or to liquidate, dissolve or wind up; or

(e) effect an IPO;

then, in connection with each such event, the Company shall give Holder:

(1) at least seven (7) Business Days prior written notice of the date on which a record will be taken for such dividend, distribution, or subscription rights (and specifying the date on which the holders of outstanding shares of the Class will be entitled thereto) or for determining rights to vote, if any, in respect of the matters referred to in (a) and (b) above;

(2) in the case of the matters referred to in (c) and (d) above at least seven (7) Business Days prior written notice of the date when the same will take place (and specifying the date on which the holders of outstanding shares of the Class will be entitled to exchange their shares for the securities or other property deliverable upon the occurrence of such event and such reasonable information as Holder may reasonably require regarding the treatment of this Warrant in connection with such event giving rise to the notice); and

(3) with respect to the IPO, at least seven (7) Business Days prior written notice of the date on which the Company proposes to file its registration statement in connection therewith.

Company will also provide information requested by Holder that is reasonably necessary to enable Holder to comply with Holder's accounting or reporting requirements.

SECTION 4. REPRESENTATIONS, WARRANTIES OF THE HOLDER.

The Holder represents and warrants to the Company as follows:

4.1 Purchase for Own Account. This Warrant and the securities to be acquired upon exercise of this Warrant by Holder are being acquired for investment for Holder's account, not as a nominee or agent, and not with a view to the public resale or distribution within the meaning of the Act. Holder also represents that it has not been formed for the specific purpose of acquiring this Warrant or the Shares.

4.2 Disclosure of Information. Holder is aware of the Company's business affairs and financial condition and has received or has had full access to all the information it considers necessary or appropriate to make an informed investment decision with respect to the acquisition of this Warrant and its underlying securities. Holder further has had an opportunity to ask questions and receive answers from the Company regarding the terms and conditions of the offering of this Warrant and its underlying securities and to obtain additional information (to the extent the Company possessed such information or could acquire it without unreasonable effort or expense) necessary to verify any information furnished to Holder or to which Holder has access.

4.3 Investment Experience. Holder understands that the purchase of this Warrant and its underlying securities involves substantial risk. Holder has experience as an investor in securities of companies in the development stage and acknowledges that Holder can bear the economic risk of such Holder's investment in this Warrant and its underlying securities and has such knowledge and experience in financial or business matters that Holder is capable of evaluating the merits and risks of its investment in this Warrant and its underlying securities and/or has a preexisting personal or business relationship with the Company and certain of its officers, directors or controlling persons of a nature and duration that enables Holder to be aware of the character, business acumen and financial circumstances of such persons.

4.4 Accredited Investor Status. Holder is an "accredited investor" within the meaning of Regulation D promulgated under the Act.

4.5 The Act. Holder understands that this Warrant and the Shares issuable upon exercise hereof have not been registered under the Act in reliance upon a specific exemption therefrom, which exemption depends upon, among other things, the bona fide nature of the Holder's investment intent as expressed herein. Holder understands that this Warrant and the Shares issued upon any exercise hereof must be held indefinitely unless subsequently registered under the Act and qualified under applicable state securities laws, or unless exemption from such registration and qualification are otherwise available. Holder is aware of the provisions of Rule 144 promulgated under the Act.

4.6 Market Stand-off Agreement. The Holder agrees that the Shares shall be subject to the Market Standoff provisions in Section 2.10 of that certain Amended and Restated Investor Rights Agreement dated effective as of June 10, 2016, as may be amended from time to time.

4.7 Voting Agreement. Holder, as a Holder of this Warrant, will not have any voting rights until the exercise of this Warrant. Upon exercise of this Warrant, the Holder hereby agrees

and covenants to become a party to the Voting Agreement dated January 23, 2015 (the "**Voting Agreement**") among the Company and investors signatories thereto, provided, that, in the event that the Voting Agreement, in effect as of the Issue Date, is amended, modified or waived in a way that materially adversely affects the obligations or rights of the Holder associated with the Shares in a different manner than such amendment, modification or waiver affects the stockholder parties thereunder holding shares of the same series and class as the Shares, then such amendment, modification or waiver shall not affect Holder or Holder's Shares without Holder's prior written consent.

SECTION 5. MISCELLANEOUS.

5.1 Term and Automatic Conversion Upon Expiration.

(a) Term. Subject to the provisions of Section 1.6 above, this Warrant is exercisable in whole or in part at any time and from time to time on or before 6:00 PM, Pacific time, on the Expiration Date and shall be void thereafter.

(b) Automatic Cashless Exercise upon Expiration. In the event that, upon the Expiration Date, the fair market value of one Share (or other security issuable upon the exercise hereof) as determined in accordance with Section 1.3 above is greater than the Warrant Price in effect on such date, then this Warrant shall automatically be deemed on and as of such date to be exercised pursuant to Section 1.2 above as to all Shares (or such other securities) for which it shall not previously have been exercised, and the Company shall, within a reasonable time, deliver a certificate representing the Shares (or such other securities) issued upon such exercise to Holder.

5.2 Legends. The Shares (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) shall be imprinted with a legend in substantially the following form:

> THE SHARES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**ACT**"), OR THE SECURITIES LAWS OF ANY STATE AND, EXCEPT AS SET FORTH IN THAT CERTAIN WARRANT TO PURCHASE STOCK ISSUED BY THE ISSUER TO SILICON VALLEY BANK DATED DECEMBER 16, 2016 MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED UNLESS AND UNTIL REGISTERED UNDER SAID ACT AND LAWS OR IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER, SUCH OFFER, SALE, PLEDGE OR OTHER TRANSFER IS EXEMPT FROM SUCH REGISTRATION.

5.3 Compliance with Securities Laws on Transfer. This Warrant and the Shares issuable upon exercise of this Warrant (and the securities issuable, directly or indirectly, upon conversion of the Shares, if any) may not be transferred or assigned in whole or in part except in compliance with applicable federal and state securities laws by the transferor and the transferee

(including, without limitation, the delivery of investment representation letters and legal opinions reasonably satisfactory to the Company, as reasonably requested by the Company). The Company shall not require Holder to provide an opinion of counsel if the transfer is to SVB Financial Group (Silicon Valley Bank's parent company) or any other affiliate of Holder, provided that any such transferee is an "accredited investor" as defined in Regulation D promulgated under the Act. Additionally, the Company shall also not require an opinion of counsel if there is no material question as to the availability of Rule 144 promulgated under the Act.

5.4 Transfer Procedure. After receipt by Silicon Valley Bank of the executed Warrant, Silicon Valley Bank will transfer all of this Warrant to its parent company, SVB Financial Group. By its acceptance of this Warrant, SVB Financial Group hereby makes to the Company each of the representations and warranties set forth in Section 4 hereof and agrees to be bound by all of the terms and conditions of this Warrant as if the original Holder hereof. Subject to the provisions of Section 5.3 and upon providing the Company with written notice, SVB Financial Group and any subsequent Holder may transfer all or part of this Warrant or the Shares issuable upon exercise of this Warrant (or the securities issuable directly or indirectly, upon conversion of the Shares, if any) to any transferee, provided, however, in connection with any such transfer, SVB Financial Group or any subsequent Holder will give the Company notice of the portion of the Warrant being transferred with the name, address and taxpayer identification number of the transferee and Holder will surrender this Warrant to the Company for reissuance to the transferee(s) (and Holder if applicable); and provided further, that any subsequent transferee other than SVB Financial Group shall agree in writing with the Company to be bound by all of the terms and conditions of this Warrant. Notwithstanding any contrary provision herein, at all times prior to the IPO, Holder may not, without the Company's prior written consent, transfer this Warrant or any portion hereof, or any Shares issued upon any exercise hereof, or any shares or other securities issued upon any conversion of any Shares issued upon any exercise hereof, to any person or entity who directly competes with the Company, except in connection with an Acquisition of the Company by such a direct competitor.

5.5 Notices. All notices and other communications hereunder from the Company to the Holder, or vice versa, shall be deemed delivered and effective (i) when given personally, (ii) on the third (3rd) Business Day after being mailed by first-class registered or certified mail, postage prepaid, (iii) upon actual receipt if given by facsimile or electronic mail and such receipt is confirmed in writing by the recipient, or (iv) on the first Business Day following delivery to a reliable overnight courier service, courier fee prepaid, in any case at such address as may have been furnished to the Company or Holder, as the case may be, in writing by the Company or such Holder from time to time in accordance with the provisions of this Section 5.5. All notices to Holder shall be addressed as follows until the Company receives notice of a change of address in connection with a transfer or otherwise:

SVB Financial Group
Attn: Treasury Department
3003 Tasman Drive, HC 215
Santa Clara, CA 95054
Telephone: (408) 654-7400
Facsimile: (408) 988-8317
Email: derivatives@svb.com

Notice to the Company shall be addressed as follows until Holder receives notice of a change in address:

Alpine Immune Sciences, Inc.
Attn: Mitchell Gold, Chief Executive Officer
201 Elliott Ave West, Suite 230
Seattle, Washington 98101
Telephone: (206) 788-4545
Facsimile:
Email: mgold@alpinebio.com

With a copy to (which shall not constitute notice):

Ascent Law Partners, LLP
Attn: Van Katzman
719 Second Ave., Ste. 1150
Seattle, WA 98104
Email: vkatzman@ascentllp.com

5.6 Waiver. This Warrant and any term hereof may be changed, waived, discharged or terminated (either generally or in a particular instance and either retroactively or prospectively) only by an instrument in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

5.7 Attorney's Fees. In the event of any dispute between the parties concerning the terms and provisions of this Warrant, the party prevailing in such dispute shall be entitled to collect from the other party all costs incurred in such dispute, including reasonable attorneys' fees.

5.8 Counterparts; Facsimile/Electronic Signatures. This Warrant may be executed in counterparts, all of which together shall constitute one and the same agreement. Any signature page delivered electronically or by facsimile shall be binding to the same extent as an original signature page with regards to any agreement subject to the terms hereof or any amendment thereto.

5.9 Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California, without giving effect to its principles regarding conflicts of law.

5.10 Headings. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.

5.11 Business Days. "**Business Day**" is any day that is not a Saturday, Sunday or a day on which Silicon Valley Bank is closed.

[Remainder of page left blank intentionally]
[Signature page follows]

IN WITNESS WHEREOF. the parties have caused this Warrant to Purchase Stock to be executed by their duly authorized representatives effective as of the Issue Date written above.

“COMPANY”

ALPINE IMMUNE SCIENCES. INC.

By: /s/ Mitchell H. Gold, MD
Name: Mitchell H. Gold, MD
Title: Executive Chairman and CEO

“HOLDER”

SILICON VALLEY BANK

By: /s/ Jackie Spencer
Name: Jackie Spencer
Title: Director

APPENDIX 1

NOTICE OF EXERCISE

1. The undersigned Holder hereby exercises its right purchase _____ shares of the Common/Series _____Preferred [circle one] Stock of ALPINE IMMUNE SCIENCES, INC. (the "**Company**") in accordance with the attached Warrant To Purchase Stock, and tenders payment of the aggregate Warrant Price for such shares as follows:

[ ] check in the amount of $_____ payable to order of the Company enclosed herewith

[ ] Wire transfer of immediately available funds to the Company's account

[ ] Cashless Exercise pursuant to Section 1.2 of the Warrant

[ ] Other [Describe]

2. Please issue a certificate or certificates representing the Shares in the name specified below:

_____
Holder's Name

_____

_____
(Address)

3. By its execution below and for the benefit of the Company, Holder hereby restates each of the representations and warranties in Section 4 of the Warrant to Purchase Stock as of the date hereof.

HOLDER:

_____

By: _____

Name: _____

Title: _____

(Date): _____

SCHEDULE 1

Company Capitalization Table

See attached

CAPITALIZATION TABLE

(as of November 1, 2016)

Total Authorized: 68,581,852

Common Stock (authorized: 46,500,000)					
Name	**Shares of Common Stock**	**Price Per Share**	**Total Investment**	**% of Series**	**% Fully Diluted**
Various Common Stock Holders	***1,225,000***	***Various.***	***$ 1,000.00***	***100.00%***	***10.15%***

Common Stock Warrants*					
Name	**Shares of Common Stock**	**Exercise Price Per Share**			**% Fully Diluted**
Various Common Stock Warrant Holders (unexercised)	***1,225,000***	***$ 0.05***			***0.21%***

Series Seed Preferred Stock (authorized: 5,000,000)					
Name	**Shares of Series Seed**	**Price Per Share**	**Total Investment**	**% of Series**	**% Fully Diluted**
Various Series Seed Holders	***5,000,000***	***$ 0.250***	***$ 1,250,000.00***	***100.00%***	***41.42%***

Series A-1 Preferred Stock (authorized: 14,590,748)					
Name	**Shares of Series A-1**	**Price Per Share**	**Total Investment**	**% of Series**	**% Fully Diluted**
Various Series A-1 Holders	***3,677,343***	***$ 2.810***	***$ 10,333,333.83***	***100.00%***	***30.46%***

Amended and Restated 2015 Stock Option Plan	**Shares**				**% Fully Diluted**
Authorized Shares Under Plan	**2,394,935**				**19.84%**
Total Options Outstanding/Committed	1,054,400				8.73%
Total Shares Issued Against the Plan	225,000				1.86%
Total Warrants Outstanding/Committed Against Plan	25,000				0.21%
Options Available for Future Issuance	**1,090,535**				**10.90%**

Total Shares Outstanding	**9,902,343**				**82.03%**
Total Fully Diluted	**12,072,278**				**100.00%**

** Counted against the 2015 Stock Option Plan.*

Exhibit 4.6

THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND HAVE BEEN ACQUIRED FOR INVESTMENT AND NOT WITH A VIEW TO, OR IN CONNECTION WITH, THE SALE OR DISTRIBUTION THEREOF. NO SUCH SALE OR DISTRIBUTION MAY BE EFFECTED WITHOUT AN EFFECTIVE REGISTRATION STATEMENT RELATED THERETO OR AN OPINION OF COUNSEL IN A FORM SATISFACTORY TO THE COMPANY THAT SUCH REGISTRATION IS NOT REQUIRED UNDER THE SECURITIES ACT.

Warrant No. [ ] Number of Shares: [ ]
Date of Issuance: April 12, 2017 (subject to adjustment)
Vesting Commencement Date: March 29, 2017

ALPINE IMMUNE SCIENCES, INC.

Common Stock Purchase Warrant

Alpine Immune Sciences, Inc., a Delaware corporation (the "Company"), for value received, hereby certifies that [ ], an individual, or her registered assigns (the "Registered Holder"), is entitled, subject to the terms set forth below, to purchase from the Company, at any time after the date hereof and on or before the Expiration Date (as defined in Section 5 below), up to [ ] ([ ]) shares (subject to the vesting provisions of Section 1(a) below or as adjusted from time to time pursuant to the provisions of this Warrant) of Common Stock of the Company, at a purchase price per share equal to U.S. [ ] (U.S. $[ ]). The shares of Common Stock purchasable upon exercise of this Warrant and the purchase price per share, as adjusted from time to time pursuant to the provisions of this Warrant, are sometimes hereinafter referred to as the "Warrant Stock" and the "Purchase Price," respectively.

1. **Exercise**.

(a) **Manner of Exercise; Vesting**. The vested portion of this Warrant may be exercised by the Registered Holder, in whole or in part, by surrendering this Warrant, with the purchase form appended hereto as Exhibit A duly executed by such Registered Holder or by such Registered Holder's duly authorized attorney, at the principal office of the Company, or at such other office or agency as the Company may designate, accompanied by payment in full of the Purchase Price payable in respect of the number of shares of Warrant Stock purchased upon such exercise. The Warrant Stock shall initially be unvested and shall vest and become exercisable as follows: one forty-eighth (1/48th) of the shares shall vest on each monthly anniversary of the Vesting Commencement Date set forth above such that all shares shall be vested and exercisable upon the four (4)-year anniversary of the Vesting Commencement Date; provided, however, that such vesting shall terminate in the event that that certain Engagement Letter dated [ ] by and between the Company and [ ] is terminated for any reason.

(b) **Effective Time of Exercise**. Each exercise of this Warrant shall be deemed to have been effected immediately prior to the close of business on the day on which this Warrant shall have been surrendered to the Company as provided in Section 1(a) above. At such time, the person or persons in whose name or names any certificates for Warrant Stock shall be issuable upon such exercise as provided in Section 1(d) below shall be deemed to have become the holder or holders of record of the Warrant Stock represented by such certificates.

(c) **Net Issue Exercise**.

(i) In lieu of exercising this Warrant in the manner provided above in Section 1(a), the Registered Holder may elect to receive shares equal to the value of this Warrant (or the portion thereof being canceled) by surrender of this Warrant at the principal office of the Company together with notice of such election in which event the Company shall issue to holder a number of shares of Common Stock computed using the following formula:

$$X = \frac{Y (A - B)}{A}$$

Where X = The number of shares of Warrant Stock to be issued to the Registered Holder.

Y = The number of shares of Warrant Stock purchasable under this Warrant (at the date of such calculation).

A = The fair market value of one share of Warrant Stock (at the date of such calculation).

B = The Purchase Price (as adjusted to the date of such calculation).

(ii) For purposes of this Section 1(c), the fair market value of one share of Warrant Stock on the date of calculation shall mean with respect to each share of Warrant Stock:

(A) if the exercise is in connection with an initial public offering of the Company's Common Stock, and if the Company's Registration Statement relating to such public offering has been declared effective by the Securities and Exchange Commission, then the fair market value per share of Common Stock shall be the product of (1) the initial "Price to Public" specified in the final prospectus with respect to the offering and (2) the number of shares of Common Stock into which each share of Warrant Stock is convertible at the date of calculation; or

(B) if the exercise is other than in connection with an initial public offering of the Company's Common Stock, the fair market value shall be at the highest price per share which the Company could obtain on the date of calculation from a willing buyer (not a current employee or director) for shares of Common Stock sold by the Company, from authorized but unissued shares, as determined in good faith by the Company's board of directors (the "Board of Directors"), unless the Company is at such time subject to an acquisition as described in Section 5(b)

below, in which case the fair market value per share of Common Stock shall be deemed to be the value of the consideration per share received by the holders of such stock pursuant to such acquisition.

(d) **Delivery to Holder**. As soon as practicable after the exercise of this Warrant in whole or in part, and in any event within thirty (30) days thereafter, the Company at its expense will cause to be issued in the name of, and delivered to, the Registered Holder, or as such Holder (upon payment by such Holder of any applicable transfer taxes) may direct:

(i) a certificate or certificates for the number of shares of Warrant Stock to which such Registered Holder shall be entitled, and

(ii) in case such exercise is in part only, a new warrant or warrants (dated the date hereof) of like tenor, calling in the aggregate on the face or faces thereof for the number of shares of Warrant Stock equal (without giving effect to any adjustment therein) to the number of such shares called for on the face of this Warrant minus the number of such shares purchased by the Registered Holder upon such exercise as provided in Section 1(a) above.

2. **Adjustments**.

(a) **Stock Splits and Dividends**. If outstanding shares of the Company's Common Stock shall be subdivided or combined into a greater or smaller number of shares or a dividend in Common Stock shall be paid in respect of Common Stock, the Purchase Price in effect immediately prior to such subdivision or at the record date of such dividend shall simultaneously with the effectiveness of such subdivision or immediately after the record date of such dividend be adjusted by multiplying the Purchase Price in effect immediately prior to such subdivision, combination or dividend by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding before giving effect to such subdivision, combination or dividend and the denominator shall be the number of shares of Common Stock outstanding immediately after giving effect to such subdivision, combination or dividend. When any adjustment is required to be made in the Purchase Price, the number of shares of Warrant Stock purchasable upon the exercise of this Warrant shall be changed to the number determined by dividing (i) an amount equal to the number of shares issuable upon the exercise of this Warrant immediately prior to such adjustment, multiplied by the Purchase Price in effect immediately prior to such adjustment, by (ii) the Purchase Price in effect immediately after such adjustment.

(b) **Reclassification, Etc**. In case of any reclassification or change of the outstanding securities of the Company or of any reorganization of the Company (or any other corporation the stock or securities of which are at the time receivable upon the exercise of this Warrant) or any similar corporate reorganization on or after the date hereof, then and in each such case the holder of this Warrant, upon the exercise hereof at any time after the consummation of such reclassification, change, reorganization, merger or conveyance, shall be entitled to receive, in lieu of the stock or other securities and property receivable upon the exercise hereof prior to such consummation, the stock or other securities or property to which such holder would have been

entitled upon such consummation if such holder had exercised this Warrant immediately prior thereto, all subject to further adjustment as provided in Section 2(a); and in each such case, the terms of this Section 2 shall be applicable to the shares of stock or other securities properly receivable upon the exercise of this Warrant after such consummation.

(c) **Adjustment Certificate**. When any adjustment is required to be made in the Warrant Stock or the Purchase Price pursuant to this Section 2, the Company shall promptly mail to the Registered Holder a certificate setting forth (i) a brief statement of the facts requiring such adjustment, (ii) the Purchase Price after such adjustment and (iii) the kind and amount of stock or other securities or property into which this Warrant shall be exercisable after such adjustment.

3. **Transfers**.

(a) **Unregistered Security**. Each holder of this Warrant acknowledges that this Warrant and the Warrant Stock have not been registered under the Securities Act, and agrees not to sell, pledge, distribute, offer for sale, transfer or otherwise dispose of this Warrant or any Warrant Stock issued upon its exercise in the absence of (i) an effective registration statement under the Act as to this Warrant or such Warrant Stock and registration or qualification of this Warrant or such Warrant Stock under any applicable U.S. federal or state securities law then in effect or (ii) an opinion of counsel, satisfactory to the Company, that such registration and qualification are not required. Each certificate or other instrument for Warrant Stock issued upon the exercise of this Warrant shall bear a legend substantially to the foregoing effect.

(b) **Transferability**. Subject to the provisions of Section 3(a) hereof this Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of the Warrant with a properly executed assignment (in the form of Exhibit B hereto) at the principal office of the Company. Notwithstanding anything else in this Warrant, Holder may not assign or transfer this Warrant without the Company's prior written consent.

(c) **Warrant Register**. The Company will maintain a register containing the names and addresses of the Registered Holders of this Warrant. Until any transfer of this Warrant is made in the warrant register, the Company may treat the Registered Holder of this Warrant as the absolute owner hereof for all purposes; provided, however, that if this Warrant is properly assigned in blank, the Company may (but shall not be required to) treat the bearer hereof as the absolute owner hereof for all purposes, notwithstanding any notice to the contrary. Any Registered Holder may change such Registered Holder's address as shown on the warrant register by written notice to the Company requesting such change.

4. **No Impairment**. The Company will not, by amendment of its charter or through reorganization, consolidation, merger, dissolution, sale of assets or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the holder of this Warrant against impairment.

5. **Termination**. This Warrant (and the right to purchase securities upon exercise hereof) shall terminate upon the earliest to occur of the following (the "Expiration Date"): (a) the seventh (7th) anniversary of the Date of Issuance set forth above, (b) the sale of all or substantially all of the Company's assets, or any stock sale, merger, or consolidation of the Company with or into another corporation or business entity other than a stock sale, merger, or consolidation in which the holders of more than fifty percent (50%) of the shares of capital stock of the Company outstanding immediately prior to such transaction continue to hold (either by the voting securities remaining outstanding or by their being converted into voting securities of the surviving entity) more than fifty percent (50%) of the total voting power represented by the voting securities of the Company, or such surviving entity, outstanding immediately after such transaction; provided, however, that this Section 5(b) shall not apply to a merger effected exclusively for the purpose of changing the domicile of the Company, or in the event of a bona fide equity financing transaction, or (c) the closing of a firm commitment underwritten public offering pursuant to a registration statement under the Securities Act.

6. **Notices of Certain Transactions**. In case:

(a) the Company shall take a record of the holders of its Common Stock (or other stock or securities at the time deliverable upon the exercise of this Warrant) for the purpose of entitling or enabling them to receive any dividend or other distribution, or to receive any right to subscribe for or purchase any shares of stock of any class or any other securities, or to receive any other right, to subscribe for or purchase any shares of stock of any class or any other securities, or to receive any other right, or

(b) of any capital reorganization of the Company, any reclassification of the capital stock of the Company, any consolidation or merger of the Company, any consolidation or merger of the Company with or into another corporation (other than a consolidation or merger in which the Company is the surviving entity), or any transfer of all or substantially all of the assets of the Company, or

(c) of the voluntary or involuntary dissolution, liquidation or winding-up of the Company, then, and in each such case, the Company will mail or cause to be mailed to the Registered Holder of this Warrant a notice specifying, as the case may be, (i) the date on which a record is to be taken for the purpose of such dividend, distribution or right, and stating the amount and character of such dividend, distribution or right, or (ii) the effective date on which such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up is to take place, and the time, if any is to be fixed, as of which the holders of record of Common Stock (or such other stock or securities at the time deliverable upon such reorganization, reclassification, consolidation, merger, transfer, dissolution, liquidation or winding-up) are to be determined. Such notice shall be mailed at least ten (10) days prior to the record date or effective date for the event specified in such notice.

7. **Reservation of Stock**. The Company will at all times reserve and keep available, solely for the issuance and delivery upon the exercise of this Warrant, such shares of Warrant Stock

and other stock, securities and property, as from time to time shall be issuable upon the exercise of this Warrant.

8. **Exchange of Warrants**. Upon the surrender by the Registered Holder of any Warrant or Warrants, properly endorsed, to the Company at the principal office of the Company, the Company will, subject to the provisions of Section 3 hereof, issue and deliver to or upon the order of such Holder, at the Company's expense, a new Warrant or Warrants of like tenor, in the name of such Registered Holder or as such Registered Holder (upon payment by such Registered Holder of any applicable transfer taxes) may direct, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock called for on the face or faces of the Warrant or Warrants so surrendered.

9. **Replacement of Warrants**. Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and (in the case of loss, theft or destruction) upon delivery of an indemnity agreement reasonably satisfactory to the Company, or (in the case of mutilation) upon surrender and cancellation of this Warrant, the Company will issue, in lieu thereof, a new Warrant of like tenor.

10. **Notices**. Any notice required or permitted by this Warrant shall be in writing and shall be deemed sufficient upon receipt, when delivered personally or by courier, overnight delivery service or confirmed facsimile, or forty-eight (48) hours after being deposited in the regular mail as certified or registered mail (airmail if sent internationally) with postage prepaid, addressed (a) if to the Registered Holder, to the address of the Registered Holder most recently furnished in writing to the Company and (b) if to the Company, to the address set forth below or subsequently modified by written notice to the Registered Holder.

11. **No Rights as Stockholder**. Until the exercise of this Warrant, the Registered Holder of this Warrant shall not have or exercise any rights by virtue hereof as a stockholder of the Company.

12. **No Fractional Shares**. No fractional shares of Common Stock or Warrant Stock will be issued in connection with any exercise hereunder. In lieu of any fractional shares which would otherwise be issuable, the Company shall pay cash equal to the product of such fraction multiplied by the fair market value of one share of Common Stock on the date of exercise, as determined in good faith by the Board of Directors.

13. **Amendment or Waiver**. Any term of this Warrant may be amended or waived only by an instrument in writing signed by the party against which enforcement of the amendment or waiver is sought.

14. **Headings**. The headings in this Warrant are for purposes of reference only and shall not limit or otherwise affect the meaning of any provision of this Warrant.

15. **Governing Law**. This Warrant shall be governed, construed and interpreted in accordance with the laws of the State of Washington, without giving effect to principles of conflicts of law.

16. **Issuance of Shares**. The Company covenants that the Warrant Stock, when issued pursuant to exercise of this Warrant, will be duly and validly issued, fully-paid and non-assessable, and free from all liens and changes with respect to the issuance thereof.

17. **Additional Agreements**. Registered Holder hereby agrees, upon the exercise of this Warrant and as a condition to the Company's obligation to issue any Warrant Stock upon the exercise of this Warrant, to become a party to any shareholder agreements, voting agreements, and/or right of first refusal agreements of the Company to which similarly situated shareholders are parties which may contain, among other things, a market standoff provision.

(signature page follows)

IN WITNESS WHEREOF, this Common Stock Purchase Warrant (CSW-004) is hereby executed effective as of the Date of Issuance set forth above.

COMPANY:

ALPINE IMMUNE SCIENCES, INC.,
a Delaware corporation

By: _____
Name: Dr. Mitchell H. Gold
Its: Executive Chairman

Address: 201 Elliott Avenue West, Ste. 230
Seattle, WA 98119

ACCEPTED AND AGREED:

[ ],
an individual

By: _____
Name: [ ]

Address: [ ]
[ ]
[ ]

EXHIBIT 1

PURCHASE FORM

To: Alpine Immune Sciences, Inc. Dated: _____

The undersigned, pursuant to the provisions set forth in the attached Warrant No. CSW-004, hereby irrevocably elects to purchase _____shares of the Common Stock covered by such Warrant and herewith makes payment of $_____, representing the full purchase price for such shares at the price per share provided for in such Warrant.

Signature: _____

Name (print): _____

Title (if applicable) _____

Company (if applicable): _____

EXHIBIT 2

ASSIGNMENT FORM

FOR VALUE RECEIVED, _____ hereby sells, assigns and transfers all of the rights of the undersigned under the attached Warrant with respect to the number of shares of Common Stock covered thereby set forth below, to:

Name of Assignee	**Mailing Address and E-mail Address**	**No. of Shares**

Dated: Signature: _____

Printed Name: _____

Witness: _____

Printed Name: _____

LOAN AND SECURITY AGREEMENT

THIS LOAN AND SECURITY AGREEMENT (this "**Agreement**") dated as of December 16, 2016 (the "**Effective Date**") between SILICON VALLEY BANK, a California corporation ("**Bank**"), and ALPINE IMMUNE SCIENCES, INC., a Delaware corporation ("**Borrower**"), provides the terms on which Bank shall lend to Borrower and Borrower shall repay Bank. The parties agree as follows:

1. ACCOUNTING AND OTHER TERMS

Accounting terms not defined in this Agreement shall be construed following GAAP. Calculations and determinations must be made following GAAP. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth in Section 13. All other terms contained in this Agreement, unless otherwise indicated, shall have the meaning provided by the Code to the extent such terms are defined therein.

2. LOAN AND TERMS OF PAYMENT

2.1 Promise to Pay. Borrower hereby unconditionally promises to pay Bank the outstanding principal amount of all Credit Extensions and accrued and unpaid interest thereon as and when due in accordance with this Agreement.

2.1.1 Term Loan Advances.

(a) Availability. Subject to the terms and conditions of this Agreement, Borrower may request that Bank make certain term loan advances (each, a "**Term Loan Advance**" and, collectively, the "**Term Loan Advances**") in two (2) tranches in an aggregate original principal amount not to exceed the Term Loan Commitment, as follows: (i) the first (1st) tranche shall be available to Borrower from the Effective Date through the Tranche One Commitment Termination Date in multiple advances in the aggregate original principal amount not to exceed Four Million Dollars ($4,000,000) (each, a "**Tranche One Term Loan Advance**"), and (ii) provided that Borrower has achieved the Tranche Two Milestone, the second (2nd) tranche shall be available to Borrower from the date on which Borrower achieves the Tranche Two Milestone through the Tranche Two Commitment Termination Date in multiple advances in the aggregate original principal amount not to exceed One Million Dollars ($1,000,000) (each, a "**Tranche Two Term Loan Advance**"). Each Term Loan Advance, other than the final Term Loan Advance, must be in an amount of not less than Five Hundred Thousand Dollars ($500,000). After repayment, no Term Loan Advance may be re-borrowed.

(b) Repayment.

(i) Interest Only Payments. For each Term Loan Advance, Borrower shall make monthly payments of accrued interest-only commencing on the first (1st) calendar day of the first (1st) month following the month in which the Funding Date occurs with respect to such Term Loan Advance and continuing thereafter during the Interest-Only Period on the first (1st) calendar day of each successive month.

(ii) Principal and Interest Payments. For each Term Loan Advance, commencing on July 1, 2018 (the "**Conversion Date**") and continuing on the first (1st) calendar day of each month thereafter, Borrower shall make thirty (30) consecutive equal monthly payments of principal each in an amount which would fully amortize the outstanding Term Loan

Advances, as of the Conversion Date, over the Term Loan Repayment Period, plus accrued interest. All unpaid principal and accrued and unpaid interest on the Term Loan Advances is due and payable in full on the Term Loan Maturity Date.

(c) Prepayment.

(i) Mandatory Prepayment Upon an Acceleration. If the Term Loan Advances are accelerated following the occurrence of an Event of Default, Borrower shall immediately pay to Bank an amount equal to the sum of (A) all accrued and unpaid interest with respect to the Term Loan Advances through the date the prepayment is made, plus (B) all outstanding principal with respect to the Term Loan Advances, plus (C) the Final Payment, plus (D) all other sums, if any, that shall have become due and payable hereunder in connection with the Term Loan Advances, including interest at the Default Rate with respect to any past due amounts.

(ii) Permitted Prepayment. Borrower shall have the option to prepay all or any portion of the Term Loan Advances advanced by Bank under this Agreement, provided Borrower (A) delivers written notice to Bank of its election to prepay the Term Loan Advances at least thirty (30) days prior to such prepayment, and (B) pays, on the date of such prepayment (1) all accrued and unpaid interest with respect to such Term Loan Advances being prepaid through the date the prepayment is made, plus (2) all unpaid principal with respect to such Term Loan Advances being prepaid, plus (3) the Final Payment, plus (4) all other sums, if any, that shall have become due and payable hereunder in connection with the Term Loan Advances, including interest at the Default Rate with respect to any past due amounts.

2.2 Payment of Interest on the Credit Extensions.

(a) Interest Rate. Subject to Section 2.2(b), the principal amount outstanding for each Term Loan Advance shall accrue interest at a floating per annum rate equal to the Prime Rate minus one and three-quarters of one percent (1.75%), which interest shall be payable monthly in accordance with Section 2.2(d).

(b) Default Rate. Immediately upon the occurrence and during the continuance of an Event of Default, Obligations shall bear interest at a rate per annum which is four percent (4.0%) above the rate that is otherwise applicable thereto (the "**Default Rate**"). Fees and expenses which are required to be paid by Borrower pursuant to the Loan Documents (including, without limitation, Bank Expenses) but are not paid when due shall bear interest until paid at a rate equal to the highest rate applicable to the Obligations. Payment or acceptance of the increased interest rate provided in this Section 2.2(b) is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies of Bank.

(c) Adjustment to Interest Rate. Changes to the interest rate of any Credit Extension based on changes to the Prime Rate shall be effective on the effective date of any change to the Prime Rate and to the extent of any such change.

(d) Payment; Interest Computation. Interest is payable monthly on the first (1st) calendar day of each month and shall be computed on the basis of a three hundred sixty (360)-day year for the actual number of days elapsed. In computing interest, (i) all payments received after 12:00 p.m. Pacific time on any day shall be deemed received at the opening of business on the next Business Day, and (ii) the date of the making of any Credit Extension shall be included and the date of payment shall be excluded; provided, however, that if any Credit Extension is repaid on the same day on which it is made, such day shall be included in computing interest on such Credit Extension.

2.3 Fees. Borrower shall pay to Bank:

(a) Good Faith Deposit. Borrower has paid to Bank a deposit of Fifteen Thousand Dollars ($15,000) (the "**Good Faith Deposit**") to initiate Bank's due diligence review process. Any portion of the Good Faith Deposit not utilized to pay Bank Expenses on the Effective Date will be deposited into Borrower's Designated Deposit Account;

(b) Final Payment. The Final Payment due on the earlier of (i) the Term Loan Maturity Date, (ii) the final payment date of each Term Loan Advance, or (iii) at the time of a prepayment for those amounts being prepaid pursuant to the terms of Sections 2.1.1(c)(i) and 2.1.1(c)(ii);

(c) Bank Expenses. All Bank Expenses (including reasonable attorneys' fees and expenses for documentation and negotiation of this Agreement) incurred through and after the Effective Date, when due (or, if there is no stated due date, upon demand by Bank). Upon request of Borrower, Bank shall provide its standard closing invoice for documentation of this Agreement on the Effective Date.

(d) Fees Fully Earned. Unless otherwise provided in this Agreement or in a separate writing by Bank, Borrower shall not be entitled to any credit, rebate, or repayment of any fees earned by Bank pursuant to this Agreement notwithstanding any termination of this Agreement or the suspension or termination of Bank's obligation to make loans and advances hereunder. Bank may deduct amounts owing by Borrower under the clauses of this Section 2.3 pursuant to the terms of Section 2.4(c). Bank shall provide Borrower written notice of deductions made from the Designated Deposit Account pursuant to the terms of the clauses of this Section 2.3.

2.4 Payments; Application of Payments; Debit of Accounts.

(a) All payments to be made by Borrower under any Loan Document shall be made in immediately available funds in Dollars, without setoff or counterclaim, before 12:00 p.m. Pacific time on the date when due. Payments of principal and/or interest received after 12:00 p.m. Pacific time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment shall be due the next Business Day, and additional fees or interest, as applicable, shall continue to accrue until paid.

(b) Bank has the exclusive right to determine the order and manner in which all payments with respect to the Obligations may be applied. Borrower shall have no right to specify the order or the accounts to which Bank shall allocate or apply any payments required to be made by Borrower to Bank or otherwise received by Bank under this Agreement when any such allocation or application is not specified elsewhere in this Agreement.

(c) Bank may debit any of Borrower's deposit accounts, including the Designated Deposit Account, for principal and interest payments or any other amounts Borrower owes Bank when due. These debits shall not constitute a set-off.

2.5 Withholding. Payments received by Bank from Borrower under this Agreement will be made free and clear of and without deduction for any and all present or future taxes, levies, imposts, duties, deductions, withholdings, assessments, fees or other charges imposed by any Governmental Authority (including any interest, additions to tax or penalties applicable thereto). Specifically, however, if at any time any Governmental Authority, applicable law, regulation or international agreement requires Borrower to make any withholding or deduction from any such payment or other sum payable hereunder to Bank, Borrower hereby covenants and agrees that the amount due from

Borrower with respect to such payment or other sum payable hereunder will be increased to the extent necessary to ensure that, after the making of such required withholding or deduction, Bank receives a net sum equal to the sum which it would have received had no withholding or deduction been required, and Borrower shall pay the full amount withheld or deducted to the relevant Governmental Authority. Borrower will, upon request, furnish Bank with proof reasonably satisfactory to Bank indicating that Borrower has made such withholding payment; provided, however, that Borrower need not make any withholding payment if the amount or validity of such withholding payment is contested in good faith by appropriate and timely proceedings and as to which payment in full is bonded or reserved against by Borrower. The agreements and obligations of Borrower contained in this Section 2.5 shall survive the termination of this Agreement.

3. CONDITIONS OF LOANS

3.1 Conditions Precedent to Initial Credit Extension. Bank's obligation to make the initial Credit Extension is subject to the condition precedent that Bank shall have received, in form and substance satisfactory to Bank, such documents, and completion of such other matters, as Bank may reasonably deem necessary or appropriate, including, without limitation:

(a) duly executed original signatures to the Loan Documents;

(b) duly executed original signatures to the Warrant;

(c) duly executed original signatures to the Control Agreement;

(d) the Operating Documents and good standing certificates of Borrower certified by the Secretaries of State (or equivalent agency thereof) of the States of Delaware and Washington and each other jurisdiction in which Borrower is qualified to conduct business, each as of a date no earlier than thirty (30) days prior to the Effective Date;

(e) duly executed original signatures to the completed Borrowing Resolutions for Borrower;

(f) certified copies, dated as of a recent date, of financing statement searches, as Bank may request, accompanied by written evidence (including any UCC termination statements) that the Liens indicated in any such financing statements either constitute Permitted Liens or have been or, in connection with the initial Credit Extension, will be terminated or released;

(g) the Perfection Certificate of Borrower, together with the duly executed original signature thereto;

(h) a landlord's consent in favor of Bank for 201 Elliott Ave West, Suite 230, Seattle, Washington 98119 by the landlord thereof, together with the duly executed original signatures thereto;

(i) a copy of Borrower's Registration Rights Agreement and/or Investors' Rights Agreement and any amendments thereto;

(j) evidence satisfactory to Bank that the insurance policies and endorsements required by Section 6.5 hereof are in full force and effect, together with appropriate evidence showing lender loss payable and/or additional insured clauses or endorsements in favor of Bank; and

(k) payment of the fees and Bank Expenses then due as specified in Section 2.3 hereof.

3.2 Conditions Precedent to all Credit Extensions. Bank's obligations to make each Credit Extension, including the initial Credit Extension, is subject to the following conditions precedent:

(a) timely receipt of an executed Payment/Advance Form;

(b) the representations and warranties in this Agreement shall be true, accurate, and complete in all material respects on the date of the Payment/Advance Form and on the Funding Date of each Credit Extension; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, and no Event of Default shall have occurred and be continuing or result from the Credit Extension. Each Credit Extension is Borrower's representation and warranty on that date that the representations and warranties in this Agreement remain true, accurate, and complete in all material respects; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date; and

(c) Bank determines to its satisfaction that there has not been any material impairment in the general affairs, management, results of operation, financial condition or the prospect of repayment of the Obligations, or any material adverse deviation by Borrower from the most recent business plan of Borrower presented to and accepted by Bank.

3.3 Post-Closing Conditions. Within thirty (30) days after the Effective Date, Bank shall have received, in form and substance satisfactory to Bank, a landlord's consent in favor of Bank for (a) 201 Elliott Ave West, Suite 230, Seattle, WA 98119 and (b) 600 Stewart Street, Suite 1503, Seattle, WA 98101, in each case, by the landlord thereof, together with the duly executed original signatures thereto.

3.4 Covenant to Deliver. Except as otherwise provided in Section 3.3, Borrower agrees to deliver to Bank each item required to be delivered to Bank under this Agreement as a condition precedent to any Credit Extension. Borrower expressly agrees that a Credit Extension made prior to the receipt by Bank of any such item shall not constitute a waiver by Bank of Borrower's obligation to deliver such item, and the making of any Credit Extension in the absence of a required item shall be in Bank's sole discretion.

3.5 Procedures for Borrowing. Subject to the prior satisfaction of all other applicable conditions to the making of a Term Loan Advance set forth in this Agreement, to obtain a Term Loan Advance, Borrower shall notify Bank (which notice shall be irrevocable) by electronic mail, facsimile, or telephone by 12:00 p.m. Pacific time on the Funding Date of the Term Loan Advance. Together with any such electronic or facsimile notification, Borrower shall deliver to Bank by electronic mail or facsimile a completed Payment/Advance Form executed by a Responsible Officer or his or her designee. Bank may rely on any telephone notice given by a person whom Bank believes is a Responsible Officer or designee. Bank shall credit the Term Loan Advances to the Designated Deposit Account on the Funding Date of such Term Loan Advance. Bank may make Term Loan Advances under

this Agreement based on instructions from a Responsible Officer or his or her designee if the Term Loan Advances are necessary to meet Obligations which have become due.

4. CREATION OF SECURITY INTEREST.

4.1 Grant of Security Interest. Borrower hereby grants Bank, to secure the payment mand performance in full of all of the Obligations, a continuing security interest in, and pledges to Bank, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof.

Borrower acknowledges that it previously has entered, and/or may in the future enter, into Bank Services Agreements with Bank. Regardless of the terms of any Bank Services Agreement, Borrower agrees that any amounts Borrower owes Bank thereunder shall be deemed to be Obligations hereunder and that it is the intent of Borrower and Bank to have all such Obligations secured by the first priority perfected security interest in the Collateral granted herein (subject only to Permitted Liens that are permitted pursuant to the terms of this Agreement to have superior priority to Bank's Lien in this Agreement).

If this Agreement is terminated, Bank's Lien in the Collateral shall continue until the Obligations (other than inchoate indemnity obligations) are repaid in full in cash. Upon payment in full in cash of the Obligations (other than inchoate indemnity obligations) and at such time as Bank's obligation to make Credit Extensions has terminated, Bank shall, at the sole cost and expense of Borrower, release its Liens in the Collateral and all rights therein shall revert to Borrower. Bank shall cooperate in good faith and shall take all actions reasonably requested by Borrower to memorialize the release of its Liens in the Collateral, including, but not limited to, the filing of UCC-3 financing statements. In the event (x) all Obligations (other than inchoate indemnity obligations), except for Bank Services, are satisfied in full, and (y) this Agreement is terminated, Bank shall terminate the security interest granted herein upon Borrower providing cash collateral acceptable to Bank in its good faith business judgment for Bank Services, if any. In the event such Bank Services consist of outstanding Letters of Credit, Borrower shall provide to Bank cash collateral in an amount equal to (x) if such Letters of Credit are denominated in Dollars, then at least one hundred five percent (105%); and (y) if such Letters of Credit are denominated in a Foreign Currency, then at least one hundred ten percent (110%), of the Dollar Equivalent of the face amount of all such Letters of Credit plus all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its business judgment), to secure all of the Obligations relating to such Letters of Credit.

4.2 Priority of Security Interest. Borrower represents, warrants, and covenants that the security interest granted herein is and shall at all times continue to be a first priority perfected security interest in the Collateral (subject only to Permitted Liens that are permitted pursuant to the terms of this Agreement to have superior priority to Bank's Lien under this Agreement). If Borrower shall acquire a commercial tort claim, Borrower shall promptly notify Bank in a writing signed by Borrower of the general details thereof and grant to Bank in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance reasonably satisfactory to Bank.

4.3 Authorization to File Financing Statements. Borrower hereby authorizes Bank to file financing statements, without notice to Borrower, with all appropriate jurisdictions to perfect or protect Bank's interest or rights hereunder, including a notice that any disposition of the Collateral, by either Borrower or any other Person, shall be deemed to violate the rights of Bank under the Code.

5. REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows:

5.1 Due Organization, Authorization; Power and Authority. Borrower is duly existing and in good standing as a Registered Organization in its jurisdiction of formation and is qualified and licensed to do business and is in good standing in any jurisdiction in which the conduct of its business or its ownership of property requires that it be qualified except where the failure to do so could not reasonably be expected to have a material adverse effect on Borrower's business. In connection with this Agreement, Borrower has delivered to Bank a completed certificate signed by Borrower, entitled "Perfection Certificate". Borrower represents and warrants to Bank that (a) Borrower's exact legal name is that indicated on the Perfection Certificate and on the signature page hereof; (b) Borrower is an organization of the type and is organized in the jurisdiction set forth in the Perfection Certificate; (c) the Perfection Certificate accurately sets forth Borrower's organizational identification number or accurately states that Borrower has none; (d) the Perfection Certificate accurately sets forth Borrower's place of business, or, if more than one, its chief executive office as well as Borrower's mailing address (if different than its chief executive office); (e) Borrower (and each of its predecessors) has not, in the past five (5) years, changed its jurisdiction of formation, organizational structure or type, or any organizational number assigned by its jurisdiction; and (f) all other information set forth on the Perfection Certificate pertaining to Borrower and each of its Subsidiaries is accurate and complete (it being understood and agreed that Borrower may from time to time update certain information in the Perfection Certificate after the Effective Date to the extent permitted by one or more specific provisions in this Agreement).

The execution, delivery and performance by Borrower of the Loan Documents to which it is a party have been duly authorized, and do not (i) conflict with any of Borrower's organizational documents, (ii) contravene, conflict with, constitute a default under or violate any material Requirement of Law, (iii) contravene, conflict or violate any applicable order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which Borrower or any of its Subsidiaries or any of their property or assets may be bound or affected, (iv) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except such Governmental Approvals which have already been obtained and are in full force and effect (or are being obtained pursuant to Section 6.1(b)) or (v) conflict with, contravene, constitute a default or breach under, or result in or permit the termination or acceleration of, any material agreement by which Borrower is bound. Borrower is not in default under any agreement to which it is a party or by which it is bound in which the default could reasonably be expected to have a material adverse effect on Borrower's business.

5.2 Collateral. Borrower has good title to, rights in, and the power to transfer each item of the Collateral upon which it purports to grant a Lien hereunder, free and clear of any and all Liens except Permitted Liens. Borrower has no Collateral Accounts at or with any bank or financial institution other than Bank or Bank's Affiliates except for the Collateral Accounts described in the Perfection Certificate delivered to Bank in connection herewith and which Borrower has taken such actions as are necessary to give Bank a perfected security interest therein, pursuant to the terms of Section 6.6(b). The Accounts are bona fide, existing obligations of the Account Debtors.

The Collateral is not in the possession of any third party bailee (such as a warehouse) except as otherwise provided in the Perfection Certificate. None of the components of the Collateral shall be maintained at locations other than as provided in the Perfection Certificate or as permitted pursuant to Section 7.2.

All Inventory is in all material respects of good and marketable quality, free from material defects.

Borrower is the sole owner of the Intellectual Property which it owns or purports to own except for (a) non-exclusive licenses granted to its customers in the ordinary course of business, (b) over-the-counter software that is commercially available to the public, and (c) material Intellectual Property licensed to Borrower and noted on the Perfection Certificate. Each Patent which it owns or purports to own and which is material to Borrower's business is valid and enforceable, and no part of the Intellectual Property which Borrower owns or purports to own and which is material to Borrower's business has been judged invalid or unenforceable, in whole or in part. To the best of Borrower's knowledge, no claim has been made that any part of the Intellectual Property violates the rights of any third party except to the extent such claim would not reasonably be expected to have a material adverse effect on Borrower's business.

Except as noted on the Perfection Certificate, Borrower is not a party to, nor is it bound by, any Restricted License.

5.3 Litigation. There are no actions or proceedings pending or, to the knowledge of any Responsible Officer, threatened in writing by or against Borrower or any of its Subsidiaries involving more than, individually or in the aggregate, Fifty Thousand Dollars ($50,000).

5.4 Financial Statements; Financial Condition. All consolidated financial statements for Borrower and any of its Subsidiaries delivered to Bank fairly present in all material respects Borrower's consolidated financial condition and Borrower's consolidated results of operations. There has not been any material deterioration in Borrower's consolidated financial condition since the date of the most recent financial statements submitted to Bank.

5.5 Solvency. The fair salable value of Borrower's consolidated assets (including goodwill minus disposition costs) exceeds the fair value of Borrower's liabilities; Borrower is not left with unreasonably small capital after the transactions in this Agreement; and Borrower is able to pay its debts (including trade debts) as they mature.

5.6 Regulatory Compliance. Borrower is not an "investment company" or a company "controlled" by an "investment company" under the Investment Company Act of 1940, as amended. Borrower is not engaged as one of its important activities in extending credit for margin stock (under Regulations X, T and U of the Federal Reserve Board of Governors). Borrower (a) has complied in all material respects with all Requirements of Law, and (b) has not violated any Requirements of Law the violation of which could reasonably be expected to have a material adverse effect on its business. None of Borrower's or any of its Subsidiaries' properties or assets has been used by Borrower or any Subsidiary or, to the best of Borrower's knowledge, by previous Persons, in disposing, producing, storing, treating, or transporting any hazardous substance other than legally. Borrower and each of its Subsidiaries have obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all Government Authorities that are necessary to continue their respective businesses as currently conducted.

5.7 Subsidiaries; Investments. Borrower does not own any stock, partnership, or other ownership interest or other equity securities except for Permitted Investments.

5.8 Tax Returns and Payments; Pension Contributions. Borrower has timely filed all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except (a) to the extent such taxes are being contested in good faith by appropriate proceedings promptly instituted and diligently conducted, so long as such reserve or other appropriate provision, if any, as shall be required in conformity with GAAP

shall have been made therefor, or (b) if such taxes, assessments, deposits and contributions do not, individually or in the aggregate, exceed Five Thousand Dollars ($5,000).

To the extent Borrower defers payment of any contested taxes, Borrower shall (i) notify Bank in writing of the commencement of, and any material development in, the proceedings, and (ii) post bonds or take any other steps required to prevent the governmental authority levying such contested taxes from obtaining a Lien upon any of the Collateral that is other than a "Permitted Lien." Borrower is unaware of any claims or adjustments proposed for any of Borrower's prior tax years which could result in additional taxes becoming due and payable by Borrower. Borrower has paid all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms, and Borrower has not withdrawn from participation in, and has not permitted partial or complete termination of, or permitted the occurrence of any other event with respect to, any such plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

5.9 Use of Proceeds. Borrower shall use the proceeds of the Credit Extensions solely as working capital and to fund its general business requirements and not for personal, family, household or agricultural purposes.

5.10 Full Disclosure. No written representation, warranty or other statement of Borrower in any certificate or written statement given to Bank, as of the date such representation, warranty, or other statement was made, taken together with all such written certificates and written statements given to Bank, contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or statements not misleading (it being recognized by Bank that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results).

5.11 Definition of "Knowledge." For purposes of the Loan Documents, whenever a representation or warranty is made to Borrower's knowledge or awareness, to the "best of" Borrower's knowledge, or with a similar qualification, knowledge or awareness means the actual knowledge, after reasonable investigation, of any Responsible Officer.

6. AFFIRMATIVE COVENANTS

Borrower shall do all of the following:

6.1 Government Compliance.

(a) Maintain its and all its Subsidiaries' legal existence and good standing in their respective jurisdictions of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to have a material adverse effect on Borrower's business or operations. Borrower shall comply, and have each Subsidiary comply, in all material respects, with all laws, ordinances and regulations to which it is subject.

(b) Obtain all of the Governmental Approvals necessary for the performance by Borrower of its obligations under the Loan Documents to which it is a party and the grant of a security interest to Bank in the Collateral. Borrower shall promptly provide copies of any such obtained Governmental Approvals to Bank.

6.2 Financial Statements, Reports, Certificates. Provide Bank with the following:

(a) Monthly Financial Statements. As soon as available, but no later than thirty (30) days after the last day of each month, a company-prepared consolidated balance sheet and income statement covering Borrower's consolidated operations for such month certified by a Responsible Officer and in a form acceptable to Bank (the "**Monthly Financial Statements**");

(b) Monthly Compliance Certificate. Within thirty (30) days after the last day of each month and together with the Monthly Financial Statements, a duly completed Compliance Certificate signed by a Responsible Officer, certifying that as of the end of such month, Borrower was in full compliance with all of the terms and conditions of this Agreement, and such other information as Bank may reasonably request;

(c) Annual Operating Budget and Financial Projections. Commencing with the 2017 fiscal year of Borrower, within ninety (90) days after the last day of each fiscal year of Borrower (and more frequently as updated), (i) annual operating budgets (including income statements, balance sheets and cash flow statements, by month) for the upcoming fiscal year of Borrower, and (ii) annual financial projections for the following fiscal year (on a quarterly basis) as approved by Borrower's board of directors, together with any related business forecasts used in the preparation of such annual financial projections;

(d) Annual Financial Statements. (A) at all times that Borrower's Board of Directors requires Borrower to prepare audited financial statements, as soon as available, but no later than one hundred eighty (180) days after the last day of Borrower's fiscal year, audited consolidated financial statements prepared under GAAP, consistently applied, together with an unqualified opinion on the financial statements from an independent certified public accounting firm reasonably acceptable to Bank and (B) at all other times, as soon as available, but no later than seventy-five (75) days after the last day of Borrower's fiscal year, a company-prepared consolidated balance sheet and income statement covering Borrower's consolidated operations during such fiscal year certified by a Responsible Officer and in a form acceptable to Bank;

(e) Other Statements. Within five (5) days of delivery, copies of all statements, reports and notices made available to Borrower's security holders or to any holders of Subordinated Debt;

(f) SEC Filings. In the event that Borrower becomes subject to the reporting requirements under the Exchange Act within five (5) days of filing, copies of all periodic and other reports, proxy statements and other materials filed by Borrower with the SEC, any Governmental Authority succeeding to any or all of the functions of the SEC or with any national securities exchange, or distributed to its shareholders, as the case may be. Documents required to be delivered pursuant to the terms hereof (to the extent any such documents are included in materials otherwise filed with the SEC) may be delivered electronically and if so delivered, shall be deemed to have been delivered on the date on which Borrower posts such documents, or provides a link thereto, on Borrower's website on the Internet at Borrower's website address; provided, however, Borrower shall promptly notify Bank in writing (which may be by electronic mail) of the posting of any such documents;

(g) Legal Action Notice. A prompt report of any legal actions pending or threatened in writing against Borrower or any of its Subsidiaries that could result in damages or costs to Borrower or any of its Subsidiaries of, individually or in the aggregate, Fifty Thousand Dollars ($50,000) or more; and

(h) Other Financial Information. Other financial information reasonably requested by Bank.

6.3 Inventory; Returns. Keep all Inventory in good and marketable condition, free from material defects. Returns and allowances between Borrower and its Account Debtors shall follow Borrower's customary practices as they exist at the Effective Date. Borrower must promptly notify Bank of all returns, recoveries, disputes and claims that involve more than Fifty Thousand Dollars ($50,000).

6.4 Taxes; Pensions. Timely file, and require each of its Subsidiaries to timely file, all required tax returns and reports and timely pay, and require each of its Subsidiaries to timely pay, all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower and each of its Subsidiaries, except for deferred payment of any taxes contested pursuant to the terms of Section 5.8 hereof, and shall deliver to Bank, on demand, appropriate certificates attesting to such payments, and pay all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms.

6.5 Insurance.

(a) Keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower's industry and location as reasonably determined by Borrower's board of directors and as Bank may reasonably request. Insurance policies shall be in a form, with financially sound and reputable insurance companies that are not Affiliates of Borrower, and in amounts that are satisfactory to Bank, in its reasonable discretion. All property policies shall have a lender's loss payable endorsement showing Bank as the sole lender loss payee. All liability policies shall show, or have endorsements showing, Bank as an additional insured. Bank shall be named as lender loss payee and/or additional insured with respect to any such insurance providing coverage in respect of any Collateral.

(b) Ensure that proceeds payable under any property policy are, at Bank's option, payable to Bank on account of the Obligations. Notwithstanding the foregoing, (a) so long as no Event of Default has occurred and is continuing, Borrower shall have the option of applying the proceeds of any casualty policy up to Two Hundred Thousand Dollars ($200,000) with respect to any loss, but not exceeding Two Hundred Fifty Thousand Dollars ($250,000) in the aggregate for all losses under all casualty policies in any one year], toward the replacement or repair of destroyed or damaged property; provided that any such replaced or repaired property (i) shall be of equal or like value as the replaced or repaired Collateral and (ii) shall be deemed Collateral in which Bank has been granted a first priority security interest, and (b) after the occurrence and during the continuance of an Event of Default, all proceeds payable under such casualty policy shall, at the option of Bank, be payable to Bank on account of the Obligations.

(c) At Bank's request, Borrower shall deliver certified copies of insurance policies and evidence of all premium payments. Each provider of any such insurance required under this Section 6.5 shall agree, by endorsement upon the policy or policies issued by it or by independent instruments furnished to Bank, that it will give Bank thirty (30) days prior written notice before any such policy or policies shall be materially altered or canceled. If Borrower fails to obtain insurance as required under this Section 6.5 or to pay any amount or furnish any required proof of payment to third persons and Bank, Bank may make all or part of such payment or obtain such insurance policies required in this Section 6.5, and take any action under the policies Bank deems prudent.

6.6 Operating Accounts.

(a) Maintain Borrower's primary banking relationship, including, without limitation, its operating and other deposit accounts, investment management, Letters of Credit, and foreign exchange services, with Bank and Bank's Affiliates, which accounts (i) within thirty (30) days from the Effective Date, shall represent at least 50% of the dollar value of Borrower's accounts at all financial institutions and (ii) within ninety (90) days from the Effective Date, shall represent at least 100% of the dollar value of Borrower's accounts at all financial institutions.

(b) Provide Bank five (5) days prior written notice before establishing any Collateral Account at or with any bank or financial institution other than Bank or Bank's Affiliates. For each Collateral Account that Borrower at any time maintains, Borrower shall cause the applicable bank or financial institution (other than Bank) at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Bank's Lien in such Collateral Account in accordance with the terms hereunder which Control Agreement may not be terminated without the prior written consent of Bank. The provisions of the previous sentence shall not apply to deposit accounts exclusively used for payroll, payroll taxes and other employee wage and benefit payments to or for the benefit of Borrower's employees and identified to Bank by Borrower as such.

6.7 Reserved.

6.8 Protection of Intellectual Property Rights.

(a) (i) Protect, defend and maintain the validity and enforceability of its Intellectual Property; (ii) promptly advise Bank in writing of material infringements or any other event that could reasonably be expected to materially and adversely affect the value of its Intellectual Property; and (iii) not allow any Intellectual Property material to Borrower's business (with such materiality to be determined in the reasonable discretion of Borrower's board of directors) to be abandoned, forfeited or dedicated to the public without Bank's written consent.

(b) Provide written notice to Bank within thirty (30) days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public). Borrower shall take such commercially reasonable steps as Bank reasonably requests to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for (i) any Restricted License to be deemed "Collateral" and for Bank to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Bank to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Bank's rights and remedies under this Agreement and the other Loan Documents.

6.9 Litigation Cooperation. From the date hereof and continuing through the termination of this Agreement, make available to Bank, without expense to Bank, Borrower and its officers, employees and agents and Borrower's books and records, to the extent that Bank may deem them reasonably necessary to prosecute or defend any third-party suit or proceeding instituted by or against Bank with respect to any Collateral or relating to Borrower.

6.10 Reserved.

6.11 Formation or Acquisition of Subsidiaries. Notwithstanding and without limiting the negative covenants contained in Sections 7.3 and 7.7 hereof, at the time that Borrower forms

any direct or indirect Subsidiary or acquires any direct or indirect Subsidiary after the Effective Date, Borrower shall, upon Bank's request in its sole and absolute discretion, (a) cause such new Subsidiary to provide to Bank either a joinder to this Agreement to cause such Subsidiary to become a co-borrower hereunder or a Guaranty, together with such appropriate financing statements and/or Control Agreements, all in form and substance satisfactory to Bank (including being sufficient to grant Bank a first priority Lien (subject to Permitted Liens) in and to the assets of such newly formed or acquired Subsidiary), (b) provide to Bank appropriate certificates and powers and financing statements, pledging all of the direct or beneficial ownership interest in such new Subsidiary, in form and substance satisfactory to Bank, and (c) provide to Bank all other documentation in form and substance satisfactory to Bank, including one or more opinions of counsel satisfactory to Bank, which in its opinion is appropriate with respect to the execution and delivery of the applicable documentation referred to above. Any document, agreement, or instrument executed or issued pursuant to this Section 6.11 shall be a Loan Document.

6.12 Further Assurances. Execute any further instruments and take further action as Bank reasonably requests to perfect or continue Bank's Lien in the Collateral or to effect the purposes of this Agreement. Deliver to Bank, within five (5) days after the same are sent or received, copies of all correspondence, reports, documents and other filings with any Governmental Authority regarding compliance with or maintenance of Governmental Approvals or Requirements of Law or that could reasonably be expected to have a material effect on any of the Governmental Approvals or otherwise on the operations of Borrower or any of its Subsidiaries.

7. NEGATIVE COVENANTS

Borrower shall not do any of the following without Bank's prior written consent:

7.1 Dispositions. Convey, sell, lease, transfer, assign, or otherwise dispose of (collectively, "**Transfer**"), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, except for Transfers (a) of Inventory in the ordinary course of business; (b) of worn-out or obsolete Equipment that is, in the reasonable judgment of Borrower, no longer economically practicable to maintain or useful in the ordinary course of business of Borrower; (c) consisting of Permitted Liens and Permitted Investments; (d) consisting of the sale or issuance of any stock of Borrower permitted under Section 7.2 of this Agreement; (e) consisting of Borrower's use or transfer of money or Cash Equivalents in the ordinary course of its business for the payment of ordinary course business expenses in a manner that is not prohibited by the terms of this Agreement or the other Loan Documents, and (f) of non-exclusive licenses for the use of the property of Borrower or its Subsidiaries in the ordinary course of business and licenses that could not result in a legal transfer of title of the licensed property but that may be exclusive in respects other than granting rights to a specific geographical territory and that may be exclusive as to territory only as to discreet geographical areas outside of the United States.

7.2 Changes in Business, Management, Control, or Business Locations. (a) Engage in or permit any of its Subsidiaries to engage in any business other than the businesses currently engaged in by Borrower and such Subsidiary, as applicable, or reasonably related thereto, as determined by Borrower's board of directors in its reasonable discretion; (b) liquidate or dissolve; (c) have a change in management, provided, however, that the addition of new corporate officers shall not be deemed a change in management as long as Mitchell Gold or Jay Venkatesan remains in a senior management role with Borrower, or (d) permit or suffer any Change in Control.

Borrower shall not, without at least thirty (30) days prior written notice to Bank: (1) add any new offices or business locations, including warehouses (unless such new offices or business locations contain less than Ten Thousand Dollars ($10,000) in Borrower's assets or property) or deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Ten Thousand Dollars

($10,000) to a bailee at a location other than to a bailee and at a location already disclosed in the Perfection Certificate, (2) change its jurisdiction of organization, (3) change its organizational structure or type, (4) change its legal name, or (5) change any organizational number (if any) assigned by its jurisdiction of organization. If Borrower intends to deliver any portion of the Collateral valued, individually or in the aggregate, in excess of Ten Thousand Dollars ($10,000) to a bailee, and Bank and such bailee are not already parties to a bailee agreement governing both the Collateral and the location to which Borrower intends to deliver the Collateral, then Borrower will first receive the written consent of Bank, and such bailee shall execute and deliver a bailee agreement in form and substance satisfactory to Bank.

7.3 Mergers or Acquisitions. Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with any other Person, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock or property of another Person (including, without limitation, by the formation of any Subsidiary). A Subsidiary may merge or consolidate into another Subsidiary or into Borrower.

7.4 Indebtedness. Create, incur, assume, or be liable for any Indebtedness, or permit any Subsidiary to do so, other than Permitted Indebtedness.

7.5 Encumbrance. Create, incur, allow, or suffer any Lien on any of its property, or assign or convey any right to receive income, including the sale of any Accounts, or permit any of its Subsidiaries to do so, except for Permitted Liens, permit any Collateral not to be subject to the first priority security interest granted herein, or enter into any agreement, document, instrument or other arrangement (except with or in favor of Bank) with any Person which directly or indirectly prohibits or has the effect of prohibiting Borrower or any Subsidiary from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower's or any Subsidiary's Intellectual Property, except as is otherwise permitted in Section 7.1 hereof and the definition of "Permitted Liens" herein.

7.6 Maintenance of Collateral Accounts. Maintain any Collateral Account except pursuant to the terms of Section 6.6(b) hereof.

7.7 Distributions; Investments. (a) Pay any dividends or make any distribution or payment or redeem, retire or purchase any capital stock, provided that (i) Borrower may convert any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof, (ii) Borrower may pay dividends solely in common stock; and (iii) Borrower may repurchase the stock of former employees or consultants pursuant to stock repurchase agreements so long as an Event of Default does not exist at the time of such repurchase and would not exist after giving effect to such repurchase, provided that the aggregate amount of all such repurchases does not exceed Two Hundred Fifty Thousand Dollars ($250,000) per fiscal year; or (b) directly or indirectly make any Investment (including, without limitation, by the formation of any Subsidiary) other than Permitted Investments, or permit any of its Subsidiaries to do so.

7.8 Transactions with Affiliates. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of Borrower, except for transactions that are in the ordinary course of Borrower's business, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm's length transaction with a non-affiliated Person.

7.9 Subordinated Debt. (a) Make or permit any payment on any Subordinated Debt, except under the terms of the subordination, intercreditor, or other similar agreement to which such Subordinated Debt is subject, or (b) amend any provision in any document relating to the Subordinated

Debt which would increase the amount thereof, provide for earlier or greater principal, interest, or other payments thereon, or adversely affect the subordination thereof to Obligations owed to Bank.

7.10 Compliance. Become an "investment company" or a company controlled by an "investment company", under the Investment Company Act of 1940, as amended, or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Credit Extension for that purpose; fail to (a) meet the minimum funding requirements of ERISA, (b) prevent a Reportable Event or Prohibited Transaction, as defined in ERISA from occurring, or (c) comply with the Federal Fair Labor Standards Act, the failure of any of the conditions described in clauses (a) through (c) which could reasonably be expected to have a material adverse effect on Borrower's business; or violate any other law or regulation, if the violation could reasonably be expected to have a material adverse effect on Borrower's business, or permit any of its Subsidiaries to do so; withdraw or permit any Subsidiary to withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any present pension, profit sharing and deferred compensation plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

8. EVENTS OF DEFAULT

Any one of the following shall constitute an event of default (an "**Event of Default**") under this Agreement:

8.1 Payment Default. Borrower fails to (a) make any payment of principal or interest on any Credit Extension when due, or (b) pay any other Obligations within three (3) Business Days after such Obligations are due and payable (which three (3) Business Day cure period shall not apply to payments due on the Term Loan Maturity Date). During the cure period, the failure to make or pay any payment specified under clause (b) hereunder is not an Event of Default (but no Credit Extension will be made during the cure period);

8.2 Covenant Default.

(a) Borrower fails or neglects to perform any obligation in Sections 3.3, 6.2, 6.4, 6.5, 6.6, 6.7 (if applicable), 6.8(b), 6.10 or violates any covenant in Section 7; or

(b) Borrower fails or neglects to perform, keep, or observe any other term, provision, condition, covenant or agreement contained in this Agreement or any Loan Documents, and as to any default (other than those specified in this Section 8) under such other term, provision, condition, covenant or agreement that can be cured, has failed to cure the default within ten (10) days after the occurrence thereof; provided, however, that if the default cannot by its nature be cured within the ten (10) day period or cannot after diligent attempts by Borrower be cured within such ten (10) day period, and such default is likely to be cured within a reasonable time, then Borrower shall have an additional period (which shall not in any case exceed thirty (30) days) to attempt to cure such default, and within such reasonable time period the failure to cure the default shall not be deemed an Event of Default (but no Credit Extensions shall be made during such cure period). Cure periods provided under this section shall not apply, among other things, to financial covenants (if any) or any other covenants set forth in clause (a) above;

8.3 Material Adverse Change. A Material Adverse Change occurs;

8.4 Attachment; Levy; Restraint on Business.

(a) (i) The service of process seeking to attach, by trustee or similar process, any funds of Borrower or of any entity under the control of Borrower (including a Subsidiary), or (ii) a notice of lien or levy is filed against any of Borrower's assets by any Governmental Authority, and the same under subclauses (i)and (ii) hereof are not, within ten (10) days after the occurrence thereof, discharged or stayed (whether through the posting of a bond or otherwise); provided, however, no Credit Extensions shall be made during any ten (10) day cure period; or

(b) (i) any material portion of Borrower's assets is attached, seized, levied on, or comes into possession of a trustee or receiver, or (ii) any court order enjoins, restrains, or prevents Borrower from conducting all or any material part of its business;

8.5 Insolvency. (a) Borrower or any of its Subsidiaries is unable to pay its debts (including trade debts) as they become due or otherwise becomes insolvent; (b) Borrower or any of its Subsidiaries begins an Insolvency Proceeding; or (c) an Insolvency Proceeding is begun against Borrower or any of its Subsidiaries and is not dismissed or stayed within thirty (30) days (but no Credit Extensions shall be made while any of the conditions described in clause (a) exist and/or until any Insolvency Proceeding is dismissed);

8.6 Other Agreements. There is, under any agreement to which Borrower is a party with a third party or parties, (a) any default resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount individually or in the aggregate in excess of Fifty Thousand Dollars ($50,000); or (b) any breach or default by Borrower, the result of which could have a material adverse effect on Borrower's business;

8.7 Judgments; Penalties. One or more fines, penalties or final judgments, orders or decrees for the payment of money in an amount, individually or in the aggregate, of at least Fifty Thousand Dollars ($50,000) (not covered by independent third-party insurance as to which liability has been accepted by such insurance carrier) shall be rendered against Borrower by any Governmental Authority, and the same are not, within ten (10) days after the entry, assessment or issuance thereof, discharged, satisfied, or paid, or after execution thereof, stayed or bonded pending appeal, or such judgments are not discharged prior to the expiration of any such stay (provided that no Credit Extensions will be made prior to the satisfaction, payment, discharge, stay, or bonding of such fine, penalty, judgment, order or decree);

8.8 Misrepresentations. Borrower or any Person acting for Borrower makes any representation, warranty, or other statement now or later in this Agreement, any Loan Document or in any writing delivered to Bank or to induce Bank to enter this Agreement or any Loan Document, and such representation, warranty, or other statement is incorrect in any material respect when made;

8.9 Subordinated Debt. Any document, instrument, or agreement evidencing any Subordinated Debt shall for any reason be revoked or invalidated or otherwise cease to be in full force and effect, any Person shall be in breach thereof or contest in any manner the validity or enforceability thereof or deny that it has any further liability or obligation thereunder, or the Obligations shall for any reason be subordinated or shall not have the priority contemplated by this Agreement; or

8.10 Governmental Approvals. Any Governmental Approval shall have been (a) revoked, rescinded, suspended, modified in an adverse manner or not renewed in the ordinary course for a

full term or (b) subject to any decision by a Governmental Authority that designates a hearing with respect to any applications for renewal of any of such Governmental Approval or that could result in the Governmental Authority taking any of the actions described in clause (a) above, and such decision or such revocation, rescission, suspension, modification or non-renewal (i) cause, or could reasonably be expected to cause, a Material Adverse Change, or (ii) adversely affects the legal qualifications of Borrower or any of its Subsidiaries to hold such Governmental Approval in any applicable jurisdiction and such revocation, rescission, suspension, modification or non-renewal could reasonably be expected to affect the status of or legal qualifications of Borrower or any of its Subsidiaries to hold any Governmental Approval in any other jurisdiction.

9. BANK'S RIGHTS AND REMEDIES

9.1 Rights and Remedies. Upon the occurrence and during the continuance of an Event of Default, Bank may, without notice or demand, do any or all of the following:

(a) declare all Obligations immediately due and payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Bank);

(b) stop advancing money or extending credit for Borrower's benefit under this Agreement or under any other agreement between Borrower and Bank;

(c) for any Letters of Credit, demand that Borrower (i) deposit cash with Bank in an amount equal to (x) if such Letters of Credit are denominated in Dollars, then at least one hundred five percent (105%); and (y) if such Letters of Credit are denominated in a Foreign Currency, then at least one hundred ten percent (110%) of the Dollar Equivalent of the aggregate face amount of all of such Letters of Credit remaining undrawn (plus all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its good faith business judgment)), to secure all of the Obligations relating to such Letters of Credit, as collateral security for the repayment of any future drawings under such Letters of Credit, and Borrower shall forthwith deposit and pay such amounts, and (ii) pay in advance all letter of credit fees scheduled to be paid or payable over the remaining term of any Letters of Credit;

(d) terminate any FX Contracts;

(e) verify the amount of, demand payment of and performance under, and collect any Accounts and General Intangibles, settle or adjust disputes and claims directly with Account Debtors for amounts on terms and in any order that Bank considers advisable, and notify any Person owing Borrower money of Bank's security interest in such funds;

(f) make any payments and do any acts it considers necessary or reasonable to protect the Collateral and/or its security interest in the Collateral. Borrower shall assemble the Collateral if Bank requests and make it available as Bank designates. Bank may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred. Borrower grants Bank a license to enter and occupy any of its premises, without charge, to exercise any of Bank's rights or remedies;

(g) apply to the Obligations any (i) balances and deposits of Borrower it holds, or (ii) amount held by Bank owing to or for the credit or the account of Borrower;

(h) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral. Bank is hereby granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower's labels, Patents, Copyrights, mask works, rights of use of any name, trade secrets, trade names, Trademarks, and advertising matter, or any similar property as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Bank's exercise of its rights under this Section, Borrower's rights under all licenses and all franchise agreements inure to Bank's benefit;

(i) place a "hold" on any account maintained with Bank and/or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Control Agreement or similar agreements providing control of any Collateral;

(j) demand and receive possession of Borrower's Books; and

(k) exercise all rights and remedies available to Bank under the Loan Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

9.2 Power of Attorney. Borrower hereby irrevocably appoints Bank as its lawful attorney-in-fact, exercisable upon the occurrence and during the continuance of an Event of Default, to: (a) endorse Borrower's name on any checks or other forms of payment or security; (b) sign Borrower's name on any invoice or bill of lading for any Account or drafts against Account Debtors; (c) settle and adjust disputes and claims about the Accounts directly with Account Debtors, for amounts and on terms Bank determines reasonable; (d) make, settle, and adjust all claims under Borrower's insurance policies; (e) pay, contest or settle any Lien, charge, encumbrance, security interest, and adverse claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; and (f) transfer the Collateral into the name of Bank or a third party as the Code permits. Borrower hereby appoints Bank as its lawful attorney-in-fact to sign Borrower's name on any documents necessary to perfect or continue the perfection of Bank's security interest in the Collateral regardless of whether an Event of Default has occurred until all Obligations have been satisfied in full and Bank is under no further obligation to make Credit Extensions hereunder. Bank's foregoing appointment as Borrower's attorney in fact, and all of Bank's rights and powers, coupled with an interest, are irrevocable until all Obligations have been fully repaid and performed and Bank's obligation to provide Credit Extensions terminates.

9.3 Protective Payments. If Borrower fails to obtain the insurance called for by Section 6.5 or fails to pay any premium thereon or fails to pay any other amount which Borrower is obligated to pay under this Agreement or any other Loan Document or which may be required to preserve the Collateral, Bank may obtain such insurance or make such payment, and all amounts so paid by Bank are Bank Expenses and immediately due and payable, bearing interest at the then highest rate applicable to the Obligations, and secured by the Collateral. Bank will make reasonable efforts to provide Borrower with notice of Bank obtaining such insurance at the time it is obtained or within a reasonable time thereafter. No payments by Bank are deemed an agreement to make similar payments in the future or Bank's waiver of any Event of Default.

9.4 Application of Payments and Proceeds Upon Default. If an Event of Default has occurred and is continuing, Bank shall have the right to apply in any order any funds in its possession, whether from Borrower account balances, payments, proceeds realized as the result of any collection of Accounts or other disposition of the Collateral, or otherwise, to the Obligations. Bank shall pay any surplus to Borrower by credit to the Designated Deposit Account or to other Persons legally entitled thereto; Borrower shall remain liable to Bank for any deficiency. If Bank, directly or indirectly, enters into a deferred payment or other credit transaction with any purchaser at any sale of Collateral, Bank shall have the

option, exercisable at any time, of either reducing the Obligations by the principal amount of the purchase price or deferring the reduction of the Obligations until the actual receipt by Bank of cash therefor.

9.5 Bank's Liability for Collateral. So long as Bank complies with reasonable banking practices regarding the safekeeping of the Collateral in the possession or under the control of Bank, Bank shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other Person. Borrower bears all risk of loss, damage or destruction of the Collateral.

9.6 No Waiver; Remedies Cumulative. Bank's failure, at any time or times, to require strict performance by Borrower of any provision of this Agreement or any other Loan Document shall not waive, affect, or diminish any right of Bank thereafter to demand strict performance and compliance herewith or therewith. No waiver hereunder shall be effective unless signed by the party granting the waiver and then is only effective for the specific instance and purpose for which it is given. Bank's rights and remedies under this Agreement and the other Loan Documents are cumulative. Bank has all rights and remedies provided under the Code, by law, or in equity. Bank's exercise of one right or remedy is not an election and shall not preclude Bank from exercising any other remedy under this Agreement or other remedy available at law or in equity, and Bank's waiver of any Event of Default is not a continuing waiver. Bank's delay in exercising any remedy is not a waiver, election, or acquiescence.

9.7 Demand Waiver. Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Bank on which Borrower is liable.

10. NOTICES

All notices, consents, requests, approvals, demands, or other communication by any party to this Agreement or any other Loan Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail or facsimile transmission; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, facsimile number, or email address indicated below. Bank or Borrower may change its mailing or electronic mail address or facsimile number by giving the other party written notice thereof in accordance with the terms of this Section 10.

If to Borrower: Alpine Immune Sciences, Inc.
201 Elliott Ave West, Suite 230
Seattle, Washington 98119
Attn: Mitchell Gold, Chief Executive Officer
Fax:
Email: mgold@alpinebio.com

With a copy to: Van Katzman
Ascent Law Partners, LLP
719 Second Avenue, Suite 1150
Seattle, WA 98104
Email: vkatzman@ascentllp.com

If to Bank: Silicon Valley Bank
555 Mission Street, Suite 900
San Francisco, California 94105
Attn: Jackie Spencer, Director
Email: jspencer@svb.com

11. CHOICE OF LAW, VENUE, JURY TRIAL WAIVER AND JUDICIAL REFERENCE

Except as otherwise expressly provided in any of the Loan Documents, California law governs the Loan Documents without regard to principles of conflicts of law. Borrower and Bank each submit to the exclusive jurisdiction of the State and Federal courts in Santa Clara County, California; provided, however, that nothing in this Agreement shall be deemed to operate to preclude Bank from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Bank. Borrower expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and Borrower hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or forum non conveniens and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Borrower hereby waives personal service of the summons, complaints, and other process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to Borrower at the address set forth in, or subsequently provided by Borrower in accordance with, Section 10 of this Agreement and that service so made shall be deemed completed upon the earlier to occur of Borrower's actual receipt thereof or three (3) days after deposit in the U.S. mails, proper postage prepaid.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, BORROWER AND BANK EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE LOAN DOCUMENTS OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR BOTH PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

WITHOUT INTENDING IN ANY WAY TO LIMIT THE PARTIES' AGREEMENT TO WAIVE THEIR RESPECTIVE RIGHT TO A TRIAL BY JURY, if the above waiver of the right to a trial by jury is not enforceable, the parties hereto agree that any and all disputes or controversies of any nature between them arising at any time shall be decided by a reference to a private judge, mutually selected by the parties (or, if they cannot agree, by the Presiding Judge of the Santa Clara County, California Superior Court) appointed in accordance with California Code of Civil Procedure Section 638 (or pursuant to comparable provisions of federal law if the dispute falls within the exclusive jurisdiction of the federal courts), sitting without a jury, in Santa Clara County, California; and the parties hereby submit to the jurisdiction of such court. The reference proceedings shall be conducted pursuant to and in accordance with the provisions of California Code of Civil Procedure §§ 638 through 645.1, inclusive. The private judge shall have the power, among others, to grant provisional relief, including without limitation, entering temporary restraining orders, issuing preliminary and permanent injunctions and

appointing receivers. All such proceedings shall be closed to the public and confidential and all records relating thereto shall be permanently sealed. If during the course of any dispute, a party desires to seek provisional relief, but a judge has not been appointed at that point pursuant to the judicial reference procedures, then such party may apply to the Santa Clara County, California Superior Court for such relief. The proceeding before the private judge shall be conducted in the same manner as it would be before a court under the rules of evidence applicable to judicial proceedings. The parties shall be entitled to discovery which shall be conducted in the same manner as it would be before a court under the rules of discovery applicable to judicial proceedings. The private judge shall oversee discovery and may enforce all discovery rules and orders applicable to judicial proceedings in the same manner as a trial court judge. The parties agree that the selected or appointed private judge shall have the power to decide all issues in the action or proceeding, whether of fact or of law, and shall report a statement of decision thereon pursuant to California Code of Civil Procedure § 644(a). Nothing in this paragraph shall limit the right of any party at any time to exercise self-help remedies, foreclose against collateral, or obtain provisional remedies. The private judge shall also determine all issues relating to the applicability, interpretation, and enforceability of this paragraph.

This Section 11 shall survive the termination of this Agreement.

12. GENERAL PROVISIONS

12.1 Termination Prior to Term Loan Maturity Date; Survival. All covenants, representations and warranties made in this Agreement shall continue in full force until this Agreement has terminated pursuant to its terms and all Obligations have been satisfied. So long as Borrower has satisfied the Obligations (other than inchoate indemnity obligations, any other obligations which, by their terms, are to survive the termination of this Agreement, and any Obligations under Bank Services Agreements that are cash collateralized in accordance with Section 4.1 of this Agreement), this Agreement may be terminated prior to the Term Loan Maturity Date by Borrower pursuant to the terms and conditions set forth in Section 2.1.1(c)(ii). Those obligations that are expressly specified in this Agreement as surviving this Agreement's termination shall continue to survive notwithstanding this Agreement's termination.

12.2 Successors and Assigns. This Agreement binds and is for the benefit of the successors and permitted assigns of each party. Borrower may not assign this Agreement or any rights or obligations under it without Bank's prior written consent (which may be granted or withheld in Bank's discretion). Bank has the right, without the consent of or notice to Borrower, to sell, transfer, assign, negotiate, or grant participation in all or any part of, or any interest in, Bank's obligations, rights, and benefits under this Agreement and the other Loan Documents (other than the Warrant, as to which assignment, transfer and other such actions are governed by the terms thereof).

12.3 Indemnification. Borrower agrees to indemnify, defend and hold Bank and its directors, officers, employees, agents, attorneys, or any other Person affiliated with or representing Bank (each, an "**Indemnified Person**") harmless against: (i) all obligations, demands, claims, and liabilities (collectively, "**Claims**") claimed or asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (ii) all losses or expenses (including Bank Expenses) in any way suffered, incurred, or paid by such Indemnified Person as a result of, following from, consequential to, or arising from this Agreement and any other transactions between Bank and Borrower (including reasonable attorneys' fees and expenses), except for Claims and/or losses directly caused by such Indemnified Person's gross negligence or willful misconduct.

This Section 12.3 shall survive until all statutes of limitation with respect to the Claims, losses, and expenses for which indemnity is given shall have run.

12.4 **Time of Essence**. Time is of the essence for the performance of all Obligations in this Agreement.

12.5 **Severability of Provisions**. Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

12.6 **Correction of Loan Documents**. Bank may correct patent errors and fill in any blanks in the Loan Documents consistent with the agreement of the parties.

12.7 **Amendments in Writing; Waiver; Integration**. No purported amendment or modification of any Loan Document, or waiver, discharge or termination of any obligation under any Loan Document, shall be enforceable or admissible unless, and only to the extent, expressly set forth in a writing signed by the party against which enforcement or admission is sought. Without limiting the generality of the foregoing, no oral promise or statement, nor any action, inaction, delay, failure to require performance or course of conduct shall operate as, or evidence, an amendment, supplement or waiver or have any other effect on any Loan Document. Any waiver granted shall be limited to the specific circumstance expressly described in it, and shall not apply to any subsequent or other circumstance, whether similar or dissimilar, or give rise to, or evidence, any obligation or commitment to grant any further waiver. The Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of the Loan Documents merge into the Loan Documents.

12.8 **Counterparts**. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement.

12.9 **Confidentiality**. In handling any confidential information, Bank shall exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made: (a) to Bank's Subsidiaries or Affiliates (such Subsidiaries and Affiliates, together with Bank, collectively, "**Bank Entities**"); (b) to prospective transferees or purchasers of any interest in the Credit Extensions (provided, however, Bank shall use its best efforts to obtain any prospective transferee's or purchaser's agreement to the terms of this provision); (c) as required by law, regulation, subpoena, or other order; (d) to Bank's regulators or as otherwise required in connection with Bank's examination or audit; (e) as Bank considers appropriate in exercising remedies under the Loan Documents; and (f) to third-party service providers of Bank so long as such service providers have executed a confidentiality agreement with Bank with terms no less restrictive than those contained herein. Confidential information does not include information that is either: (i) in the public domain or in Bank's possession when disclosed to Bank, or becomes part of the public domain (other than as a result of its disclosure by Bank in violation of this Agreement) after disclosure to Bank; or (ii) disclosed to Bank by a third party, if Bank does not know that the third party is prohibited from disclosing the information.

Bank Entities may use anonymous forms of confidential information for aggregate datasets, for analyses or reporting, and for any other uses not expressly prohibited in writing by Borrower. The provisions of the immediately preceding sentence shall survive termination of this Agreement.

12.10 **Attorneys' Fees, Costs and Expenses**. In any action or proceeding between Borrower and Bank arising out of or relating to the Loan Documents, the prevailing party shall be entitled to recover its reasonable attorneys' fees and other costs and expenses incurred, in addition to any other relief to which it may be entitled.

12.11 Electronic Execution of Documents. The words "execution," "signed," "signature" and words of like import in any Loan Document shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act.

12.12 Captions. The headings used in this Agreement are for convenience only and shall not affect the interpretation of this Agreement.

12.13 Construction of Agreement. The parties mutually acknowledge that they and their attorneys have participated in the preparation and negotiation of this Agreement. In cases of uncertainty this Agreement shall be construed without regard to which of the parties caused the uncertainty to exist.

12.14 Relationship. The relationship of the parties to this Agreement is determined solely by the provisions of this Agreement. The parties do not intend to create any agency, partnership, joint venture, trust, fiduciary or other relationship with duties or incidents different from those of parties to an arm's-length contract.

12.15 Third Parties. Nothing in this Agreement, whether express or implied, is intended to: (a) confer any benefits, rights or remedies under or by reason of this Agreement on any persons other than the express parties to it and their respective permitted successors and assigns; (b) relieve or discharge the obligation or liability of any person not an express party to this Agreement; or (c) give any person not an express party to this Agreement any right of subrogation or action against any party to this Agreement.

13. DEFINITIONS

13.1 Definitions. As used in the Loan Documents, the word "shall" is mandatory, the word "may" is permissive, the word "or" is not exclusive, the words "includes" and "including" are not limiting, the singular includes the plural, and numbers denoting amounts that are set off in brackets are negative. As used in this Agreement, the following capitalized terms have the following meanings:

"**Account**" is any "account" as defined in the Code with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to Borrower.

"**Account Debtor**" is any "account debtor" as defined in the Code with such additions to such term as may hereafter be made.

"**Affiliate**" is, with respect to any Person, each other Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person's senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person's managers and members.

"**Agreement**" is defined in the preamble hereof.

"**Bank**" is defined in the preamble hereof.

"**Bank Entities**" is defined in Section 12.9.

"**Bank Expenses**" are all audit fees and expenses, costs, and expenses (including reasonable attorneys' fees and expenses) for preparing, amending, negotiating, administering, defending and enforcing the Loan Documents (including, without limitation, those incurred in connection with appeals or Insolvency Proceedings) or otherwise incurred with respect to Borrower.

"**Bank Services**" are any products, credit services, and/or financial accommodations previously, now, or hereafter provided to Borrower or any of its Subsidiaries by Bank or any Bank Affiliate, including, without limitation, any letters of credit, cash management services (including, without limitation, merchant services, direct deposit of payroll, business credit cards, and check cashing services), interest rate swap arrangements, and foreign exchange services as any such products or services may be identified in Bank's various agreements related thereto (each, a "**Bank Services Agreement**").

"**Borrower**" is defined in the preamble hereof.

"**Borrower's Books**" are all Borrower's books and records including ledgers, federal and state tax returns, records regarding Borrower's assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

"**Borrowing Resolutions**" are, with respect to any Person, those resolutions substantially in the form attached hereto as Exhibit D.

"**Business Day**" is any day that is not a Saturday, Sunday or a day on which Bank is closed.

"**Cash Equivalents**" means (a) marketable direct obligations issued or unconditionally guaranteed by the United States or any agency or any State thereof having maturities of not more than one (1) year from the date of acquisition; (b) commercial paper maturing no more than one (1) year after its creation and having the highest rating from either Standard & Poor's Ratings Group or Moody's Investors Service, Inc.; and (c) Bank's certificates of deposit issued maturing no more than one (1) year after issue.

"**Change in Control**" means (a) at any time, any "person" or "group" (as such terms are used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")), (other than Alpine Immunosciences, L.P., OrbiMed Private Investments VI, LP, and Frazier Life Sciences VIII, L.P) shall become, or obtain rights (whether by means or warrants, options or otherwise) to become, the "beneficial owner" (as defined in Rules 13(d)-3 and 13(d)-5 under the Exchange Act), directly or indirectly, of twenty-five percent (25%) or more of the ordinary voting power for the election of directors of Borrower (determined on a fully diluted basis) other than by the sale of Borrower's equity securities in a public offering or to venture capital, private equity, strategic, family office, or other similar investors in a bona fide equity financing so long as Borrower identifies to Bank the investors at least seven (7) Business Days prior to the closing of the transaction and provides to Bank a description of the material terms of the transaction; (b) during any period of twelve (12) consecutive months, a majority of the members of the board of directors or other equivalent governing body of Borrower cease to be composed of individuals (i) who were members of that board or equivalent governing body on the first day of such period, (ii) whose election or nomination to that board or equivalent governing body was approved by individuals referred to in clause (i) above constituting at the time of such election or nomination at least a majority of that board or equivalent governing body or (iii) whose election or nomination to that board or other equivalent governing body was approved by individuals referred to in clauses (i) and (ii) above constituting at the time of such election or nomination at least a majority of that board or equivalent governing body; (c) Alpine Immunosciences, L.P., OrbiMed Private Investments VI, LP, and Frazier Life Sciences VIII, L.P cease to collectively own at least 50% of the voting securities of Borrower; or (d) at any time, Borrower shall cease to own and control, of record and beneficially, directly

or indirectly, one hundred percent (100%) of each class of outstanding capital stock of each subsidiary of Borrower free and clear of all Liens (except Liens created by this Agreement).

"**Claims**" is defined in Section 12.3.

"**Code**" is the Uniform Commercial Code, as the same may, from time to time, be enacted and in effect in the State of California; provided, that, to the extent that the Code is used to define any term herein or in any Loan Document and such term is defined differently in different Articles or Divisions of the Code, the definition of such term contained in Article or Division 9 shall govern; provided further, that in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Bank's Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of California, the term "**Code**" shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

"**Collateral**" is any and all properties, rights and assets of Borrower described on Exhibit A.

"**Collateral Account**" is any Deposit Account, Securities Account, or Commodity Account.

"**Commodity Account**" is any "commodity account" as defined in the Code with such additions to such term as may hereafter be made.

"**Compliance Certificate**" is that certain certificate in the form attached hereto as Exhibit B.

"**Contingent Obligation**" is, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation, in each case, directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; but "Contingent Obligation" does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

"**Control Agreement**" is any control agreement entered into among the depository institution at which Borrower maintains a Deposit Account or the securities intermediary or commodity intermediary at which Borrower maintains a Securities Account or a Commodity Account, Borrower, and Bank pursuant to which Bank obtains control (within the meaning of the Code) over such Deposit Account, Securities Account, or Commodity Account.

"**Conversion Date**" is defined in Section 2.1.1(b)(ii).

"**Copyrights**" are any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret.

"**Credit Extension**" is any Term Loan Advance or any other extension of credit by Bank for Borrower's benefit.

"**Default Rate**" is defined in Section 2.2(b).

"**Deposit Account**" is any "deposit account" as defined in the Code with such additions to such term as may hereafter be made.

"**Designated Deposit Account**" is the multicurrency account denominated in Dollars, account number *******___, maintained by Borrower with Bank.

"**Dollar Equivalent**" is, at any time, (a) with respect to any amount denominated in Dollars, such amount, and (b) with respect to any amount denominated in a Foreign Currency, the equivalent amount therefor in Dollars as determined by Bank at such time on the basis of the then-prevailing rate of exchange in San Francisco, California, for sales of the Foreign Currency for transfer to the country issuing such Foreign Currency.

"**Dollars**," "**dollars**" or use of the sign "**$**" means only lawful money of the United States and not any other currency, regardless of whether that currency uses the "$" sign to denote its currency or may be readily converted into lawful money of the United States.

"**Effective Date**" is defined in the preamble hereof.

"**Equipment**" is all "equipment" as defined in the Code with such additions to such term as may hereafter be made, and includes without limitation all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

"**ERISA**" is the Employee Retirement Income Security Act of 1974, and its regulations.

"**Event of Default**" is defined in Section 8.

"**Exchange Act**" is the Securities Exchange Act of 1934, as amended.

"**Final Payment**" is a payment (in addition to and not a substitution for the regular monthly payments of principal and accrued interest) due on the dates set forth in Section 2.3(b), equal to the Loan Amount of the applicable Term Loan Advance, multiplied by the Final Payment Percentage.

"**Final Payment Percentage**" is, for each Term Loan Advance, equal to seven and one-half of one percent (7.50%).

"**Financing**" means a new bona fide second tranche of equity financing (closed after the Effective Date) with investors and on terms satisfactory to Bank in its sole discretion, including but not limited to the "Second Tranche Closing" as defined in that certain Alpine Immune Sciences, Inc., Series A Preferred Stock Purchase Agreement dated June 10, 2016.

"**Foreign Currency**" **means** lawful money of a country other than the United States.

"**Funding Date**" is any date on which a Credit Extension is made to or for the account of Borrower which shall be a Business Day.

"**FX Contract**" is any foreign exchange contract by and between Borrower and Bank under which Borrower commits to purchase from or sell to Bank a specific amount of Foreign Currency on a specified date.

"**GAAP**" is generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession, which are applicable to the circumstances as of the date of determination.

"**General Intangibles**" is all "general intangibles" as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation, all Intellectual Property, claims, income and other tax refunds, security and other deposits, payment intangibles, contract rights, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort or otherwise), insurance policies (including without limitation key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

"**Good Faith Deposit**" is defined in Section 2.3(a).

"**Governmental Approval**" is any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority.

"**Governmental Authority**" is any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

"**Guaranty**" is any guarantee of all or any part of the Obligations, as the same may from time to time be amended, restated, modified or otherwise supplemented.

"**Indebtedness**" is (a) indebtedness for borrowed money or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit, (b) obligations evidenced by notes, bonds, debentures or similar instruments, (c) capital lease obligations, and (d) Contingent Obligations.

"**Indemnified Person**" is defined in Section 12.3.

"**Insolvency Proceeding**" is any proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

"**Intellectual Property**" means, with respect to any Person, all of such Person's right, title, and interest in and to the following:

(a) its Copyrights, Trademarks and Patents;

(b) any and all trade secrets and trade secret rights, including, without limitation, any rights to unpatented inventions, know-how, operating manuals;

(c) any and all source code;

(d) any and all design rights which may be available to such Person;

(e) any and all claims for damages by way of past, present and future infringement of any of the foregoing, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the Intellectual Property rights identified above; and

(f) all amendments, renewals and extensions of any of the Copyrights, Trademarks or Patents.

"**Interest-Only Period**" means, for each Term Loan Advance, the period commencing on the first (1st) calendar day of the first (1st) month following the month in which the Funding Date of such Term Loan Advance occurs and continuing through June 30, 2018.

"**Inventory**" is all "inventory" as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products, including without limitation such inventory as is temporarily out of Borrower's custody or possession or in transit and including any returned goods and any documents of title representing any of the above.

"**Investment**" is any beneficial ownership interest in any Person (including stock, partnership interest or other securities), and any loan, advance or capital contribution to any Person.

"**Letter of Credit**" is a standby or commercial letter of credit issued by Bank upon request of Borrower based upon an application, guarantee, indemnity, or similar agreement.

"**Lien**" is a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of law or otherwise against any property.

"**Loan Amount**" in respect of each Term Loan Advance is the original principal amount of such Term Loan Advance.

"**Loan Documents**" are, collectively, this Agreement and any schedules, exhibits, certificates, notices, and any other documents related to this Agreement, the Warrant, any Bank Services Agreement, any subordination agreement, any note, or notes or guaranties executed by Borrower or any guarantor, and any other present or future agreement by Borrower and/or any guarantor with or for the benefit of Bank in connection with this Agreement or Bank Services, all as amended, restated, or otherwise modified.

"**Material Adverse Change**" is (a) a material impairment in the perfection or priority of Bank's Lien in the Collateral or in the value of such Collateral; (b) a material adverse change in the

business, operations, or condition (financial or otherwise) of Borrower; or (c) a material impairment of the prospect of repayment of any portion of the Obligations.

"**Monthly Financial Statements**" is defined in Section 6.2(a).

"**Net Proceeds**" means the gross proceeds received by Borrower from the Financing, less reasonable and customary closing costs (including, but not limited to, reasonable attorneys' fees, brokers' fees or commissions, investment bankers' fees or commissions and similar items) owed to any Person in an arm's length transaction that are actually incurred in connection with the Financing.

"**Obligations**" are Borrower's obligations to pay when due any debts, principal, interest, fees, Bank Expenses, and other amounts Borrower owes Bank now or later, whether under this Agreement, the other Loan Documents (other than the Warrant), or otherwise, including, without limitation, all obligations relating to letters of credit (including reimbursement obligations for drawn and undrawn letters of credit), cash management services, and foreign exchange contracts, if any, and including interest accruing after Insolvency Proceedings begin and debts, liabilities, or obligations of Borrower assigned to Bank, and to perform Borrower's duties under the Loan Documents (other than the Warrant).

"**Operating Documents**" are, for any Person, such Person's formation documents, as certified by the Secretary of State (or equivalent agency) of such Person's jurisdiction of organization on a date that is no earlier than thirty (30) days prior to the Effective Date, and, (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments or modifications thereto.

"**Patents**" means all patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

"**Payment/Advance Form**" is that certain form attached hereto as Exhibit C.

"**Perfection Certificate**" is defined in Section 5.1.

"**Permitted Indebtedness**" is:

(a) Borrower's Indebtedness to Bank under this Agreement and the other Loan Documents;

(b) Indebtedness existing on the Effective Date and shown on the Perfection Certificate;

(c) Subordinated Debt;

(d) unsecured Indebtedness to trade creditors incurred in the ordinary course of business;

(e) Indebtedness incurred as a result of endorsing negotiable instruments received in the ordinary course of business;

(f) Indebtedness secured by Liens permitted under clauses (a) and (c) of the definition of "Permitted Liens" hereunder; and

(g) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness (a) through (f) above, provided that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon Borrower or its Subsidiary, as the case may be.

"**Permitted Investments**" are:

(a) Investments (including, without limitation, Subsidiaries) existing on the Effective Date and shown on the Perfection Certificate;

(b) Investments consisting of Cash Equivalents;

(c) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of Borrower;

(d) Investments consisting of deposit accounts in which Bank has a perfected security interest;

(e) Investments accepted in connection with Transfers permitted by Section 7.1;

(f) Investments (i) by Borrower in Subsidiaries not to exceed Fifty Thousand Dollars ($50,000) in the aggregate in any fiscal year and (ii) by Subsidiaries in other Subsidiaries not to exceed Fifty Thousand Dollars ($50,000) in the aggregate in any fiscal year or in Borrower;

(g) Investments consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the ordinary course of business, and (ii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans or agreements approved by Borrower's Board of Directors;

(h) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business; and

(i) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the ordinary course of business; provided that this paragraph (i) shall not apply to Investments of Borrower in any Subsidiary.

"**Permitted Liens**" are:

(a) Liens existing on the Effective Date and shown on the Perfection Certificate or arising under this Agreement and the other Loan Documents;

(b) Liens for taxes, fees, assessments or other government charges or levies, either (i) not due and payable or (ii) being contested in good faith and for which Borrower maintains adequate reserves on its Books, provided that no notice of any such Lien has been filed or recorded under the Internal Revenue Code of 1986, as amended, and the Treasury Regulations adopted thereunder;

(c) purchase money Liens (i) on Equipment acquired or held by Borrower incurred for financing the acquisition of the Equipment securing no more than Fifty Thousand Dollars ($50,000) in the aggregate amount outstanding, or (ii) existing on Equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the Equipment;

(d) Liens of carriers, warehousemen, suppliers, or other Persons that are possessory in nature arising in the ordinary course of business so long as such Liens attach only to Inventory, securing liabilities in the aggregate amount not to exceed Fifty Thousand Dollars ($50,000) and which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings which proceedings have the effect of preventing the forfeiture or sale of the property subject thereto;

(e) Liens to secure payment of workers' compensation, employment insurance, old-age pensions, social security and other like obligations incurred in the ordinary course of business (other than Liens imposed by ERISA);

(f) Liens incurred in the extension, renewal or refinancing of the indebtedness secured by Liens described in (a) through (c), but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase;

(g) leases or subleases of real property granted in the ordinary course of Borrower's business (or, if referring to another Person, in the ordinary course of such Person's business), and leases, subleases, non-exclusive licenses or sublicenses of personal property (other than Intellectual Property) granted in the ordinary course of Borrower's business (or, if referring to another Person, in the ordinary course of such Person's business), if the leases, subleases, licenses and sublicenses do not prohibit granting Bank a security interest therein;

(h) non-exclusive licenses of Intellectual Property granted to third parties in the ordinary course of business, and licenses of Intellectual Property that could not result in a legal transfer of title of the licensed property that may be exclusive in respects other than granting rights to a specific geographical territory and that may be exclusive as to territory only as to discreet geographical areas outside of the United States;

(i) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default under Sections 8.4 and 8.7; and

(j) Liens in favor of other financial institutions arising in connection with Borrower's deposit and/or securities accounts held at such institutions, provided that Bank has a perfected security interest in the amounts held in such deposit and/or securities accounts.

"**Person**" is any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

"**Prime Rate**" is the rate of interest per annum from time to time published in the money rates section of *The Wall Street Journal* or any successor publication thereto as the "prime rate" then in effect; provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement; and provided further that if such rate of interest, as set forth from time to time in the money rates section of *The Wall Street Journal*, becomes unavailable for any reason as determined by Bank, the "Prime Rate" shall mean the rate of interest per annum announced by Bank as its

prime rate in effect at its principal office in the State of California (such Bank announced Prime Rate not being intended to be the lowest rate of interest charged by Bank in connection with extensions of credit to debtors).

"**Registered Organization**" is any "registered organization" as defined in the Code with such additions to such term as may hereafter be made.

"**Requirement of Law**" is as to any Person, the organizational or governing documents of such Person, and any law (statutory or common), treaty, rule or regulation or determination of an arbitrator or a court or other Governmental Authority, in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject.

"**Responsible Officer**" is any of the Chief Executive Officer, President, Chief Financial Officer, Director of Business Operations, and Controller of Borrower.

"**Restricted License**" is any material license or other agreement with respect to which Borrower is the licensee (a) that prohibits or otherwise restricts Borrower from granting a security interest in Borrower's interest in such license or agreement or any other property, or (b) for which a default under or termination of could interfere with the Bank's right to sell any Collateral.

"**SEC**" shall mean the Securities and Exchange Commission, any successor thereto, and any analogous Governmental Authority.

"**Securities Account**" is any "securities account" as defined in the Code with such additions to such term as may hereafter be made.

"**Subordinated Debt**" is indebtedness incurred by Borrower subordinated to all of Borrower's now or hereafter indebtedness to Bank (pursuant to a subordination, intercreditor, or other similar agreement in form and substance satisfactory to Bank entered into between Bank and the other creditor), on terms acceptable to Bank.

"**Subsidiary**" is, as to any Person, a corporation, partnership, limited liability company or other entity of which shares of stock or other ownership interests having ordinary voting power (other than stock or such other ownership interests having such power only by reason of the happening of a contingency) to elect a majority of the board of directors or other managers of such corporation, partnership or other entity are at the time owned, or the management of which is otherwise controlled, directly or indirectly through one or more intermediaries, or both, by such Person. Unless the context otherwise requires, each reference to a Subsidiary herein shall be a reference to a Subsidiary of Borrower.

"**Term Loan Advance**" is defined in Section 2.1.1(a).

"**Term Loan Commitment**" is Five Million Dollars ($5,000,000).

"**Term Loan Maturity Date**" is December 1, 2020.

"**Term Loan Repayment Period**" is a period of time equal to thirty (30) consecutive months commencing on the Conversion Date.

"**Trademarks**" means any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Borrower connected with and symbolized by such trademarks.

"**Tranche One Commitment Termination Date**" is June 30, 2017.

"**Tranche One Term Loan Advance**" is defined in Section 2.1.1(a).

"**Tranche Two Commitment Termination Date**" is December 31, 2017.

"**Tranche Two Milestone**" means Bank's receipt of evidence satisfactory to Bank in its sole discretion that either (a) Borrower has received aggregate Net Proceeds of at least Twenty Million Dollars ($20,000,000) or (b) Borrower has received the first milestone payment from Kite Pharma in the amount of at least Twenty Million Dollars ($20,000,000).

"**Tranche Two Term Loan Advance**" is defined in Section 2.1.1(a).

"**Transfer**" is defined in Section 7.1.

"**Warrant**" is that certain Warrant to Purchase Stock dated as of the Effective Date executed by Borrower in favor of Bank, as the same may be amended, modified, supplemented or restated from time to time.

[Signature page follows**]**

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the Effective Date.

BORROWER:

ALPINE IMMUNE SCIENCES, INC.

By: /s/ Mitchell H. Gold, MD
Name: Mitchell H. Gold, MD
Title: Executive Chairman and CEO

BANK:

SILICON VALLEY BANK

By: /s/ Jackie Spencer
Name: Jackie Spencer
Title: Director

EXHIBIT A

COLLATERAL DESCRIPTION

The Collateral consists of all of Borrower's right, title and interest in and to the following personal property:

All goods, Accounts (including health-care receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles (except for Intellectual Property as provided below), commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and

All Borrower's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

Notwithstanding the foregoing, the Collateral does not include any Intellectual Property; provided, however, the Collateral shall include all Accounts and all proceeds of Intellectual Property. If a judicial authority (including a U.S. Bankruptcy Court) would hold that a security interest in the underlying Intellectual Property is necessary to have a security interest in such Accounts and such property that are proceeds of Intellectual Property, then the Collateral shall automatically, and effective as of the Effective Date, include the Intellectual Property solely for the purpose and to the extent necessary to permit perfection of Bank's security interest in such Accounts and such other property of Borrower that are proceeds of the Intellectual Property.

Pursuant to the terms of a certain negative pledge arrangement with Bank, Borrower has agreed not to encumber any of its Intellectual Property without Bank's prior written consent; provided, however, that nothing shall prohibit or impair Borrower's ability to license its Intellectual Property, whether on an exclusive or non-exclusive basis, in conjunction with third-party business development transactions intended to generate royalties or other revenues for Borrower.

EXHIBIT B

COMPLIANCE CERTIFICATE

TO: SILICON VALLEY BANK Date: _____

FROM: ALPINE IMMUNE SCIENCES, INC.

The undersigned authorized officer of ALPINE IMMUNE SCIENCES, INC., a Delaware corporation ("**Borrower**"), certifies that under the terms and conditions of the Loan and Security Agreement between Borrower and Bank (the "**Agreement**"):

(1) Borrower is in complete compliance for the period ending _____ with all required covenants except as noted below; (2) there are no Events of Default; (3) all representations and warranties in the Agreement are true and correct in all material respects on this date except as noted below; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date; (4) Borrower, and each of its Subsidiaries, has timely filed all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except as otherwise permitted pursuant to the terms of Section 5.8 of the Agreement; and (5) no Liens have been levied or claims made against Borrower or any of its Subsidiaries relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Bank.

Attached are the required documents supporting the certification. The undersigned certifies that these are prepared in accordance with GAAP consistently applied from one period to the next except as explained in an accompanying letter or footnotes. The undersigned acknowledges that no borrowings may be requested at any time or date of determination that Borrower is not in compliance with any of the terms of the Agreement, and that compliance is determined not just at the date this certificate is delivered. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Agreement.

Please indicate compliance status by circling Yes/No under "Complies" column.

Reporting Covenants	**Required**	**Complies**
Monthly financial statements + Compliance Certificate ("**CC**")	Monthly within 30 days	Yes No
Annual financial statement + CC	(a) if Board requires audited financial statement, FYE within 180 days (CPA Audited) and (b) at all other times, FYE within 60 days (company-prepared)	Yes No
Annual budget and board-approved projections	FYE within 90 days*	Yes No
10-Q, 10-K and 8-K	Within 5 days after filing with SEC	Yes No

*commencing with 2017 fiscal year of Borrower.

Other Matters

Have there been any amendments of or other changes to the capitalization table of Borrower and to the Operating Documents of Borrower or any of its Subsidiaries (other than the issuance of stock option grants under Borrower's 2016 Stock Plan)? If yes, provide copies of any such amendments or changes with this Compliance Certificate.	Yes	No

The following are the exceptions with respect to the certification above: (If no exceptions exist, state “No exceptions to note.”)

ALPINE IMMUNE SCIENCES, INC.

By: _____

Name: _____

Title: _____

BANK USE ONLY

Received by: _____
AUTHORIZED SIGNER

Date: _____

Verified: _____
AUTHORIZED SIGNER

Date: _____

Compliance Status: Yes No

EXHIBIT C

LOAN PAYMENT/ADVANCE REQUEST FORM

Deadline For Same Day Processing Is Noon Pacific Time

Fax To: Date:

LOAN PAYMENT:

ALPINE IMMUNE SCIENCES, INC.

From Account # _____ To Account # _____
(Deposit Account #) (Loan Account #)

Principal $ _____ and/or Interest $ _____

Authorized Signature: _____ Phone Number: _____

Print Name/Title: _____

LOAN ADVANCE:

Complete Outgoing Wire Request section below if all or a portion of the funds from this Credit Extension are for an outgoing wire.

From Account # _____ To Account # _____
(Loan Account #) (Deposit Account #)

Amount of Credit Extension $ _____

All Borrower's representations and warranties in the Loan and Security Agreement are true, correct and complete in all material respects on the date of the request for a Credit Extension ; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date:

Authorized Signature: _____ Phone Number: _____

Print Name/Title: _____

OUTGOING WIRE REQUEST:

Complete only if all or a portion of funds from the Credit Extension above is to be wired.

Deadline for same day processing is noon, Pacific Time

Beneficiary Name: _____ Amount of wire: $ _____

Beneficiary Bank: _____ Account Number: _____

City and State: _____

Beneficiary Bank Transit (ABA)#: _____ Beneficiary Bank Code (Swift, Sort, Chip, etc.): _____
(For International Wire Only)

Intermediary Bank: _____ Transit (ABA) #: _____

For Further Credit to: _____

Special Instructions: _____

By signing below, I (we) acknowledge and agree that my (our) funds transfer request shall be processed in accordance with and subject to the terms and conditions set forth in the agreement(s) covering funds transfer service(s), which agreement(s) were previously received and executed by me (us).

Authorized Signature: _____ 2nd Signature (if required): _____

Print Name/Title: _____ Print Name/Title: _____

Telephone #: _____ Telephone: _____

EXHIBIT D

FORM OF BORROWING RESOLUTIONS

[See Attached]

CORPORATE BORROWING CERTIFICATE

BORROWER: ALPINE IMMUNE SCIENCES, INC. **DATE: DECEMBER ___, 2016**
BANK: SILICON VALLEY BANK

I hereby certify as follows, as of the date set forth above:

1. I am the Secretary, Assistant Secretary or other officer of Borrower. My title is as set forth below.

2. Borrower's exact legal name is set forth above. Borrower is a corporation existing under the laws of the State of Delaware.

3. Attached hereto are true, correct and complete copies of Borrower's Articles/Certificate of Incorporation (including amendments), as filed with the Secretary of State of the state in which Borrower is incorporated as set forth above. Such Articles/Certificate of Incorporation have not been amended, annulled, rescinded, revoked or supplemented, and remain in full force and effect as of the date hereof.

4. The following resolutions were duly and validly adopted by Borrower's Board of Directors at a duly held meeting of such directors (or pursuant to a unanimous written consent or other authorized corporate action). Such resolutions are in full force and effect as of the date hereof and have not been in any way modified, repealed, rescinded, amended or revoked, and Silicon Valley Bank ("Bank") may rely on them until Bank receives written notice of revocation from Borrower.

RESOLVED, that **any one** of the following officers or employees of Borrower, whose names, titles and signatures are below, may act on behalf of Borrower:

Name	Title	Signature	Authorized to Add or Remove Signatories
			☐
			☐
			☐
			☐

RESOLVED FURTHER, that **any one** of the persons designated above with a checked box beside his or her name may, from time to time, add or remove any individuals to and from the above list of persons authorized to act on behalf of Borrower.

RESOLVED FURTHER, that such individuals may, on behalf of Borrower:

Borrow Money. Borrow money from Bank.
Execute Loan Documents. Execute any loan documents Bank requires.
Grant Security. Grant Bank a security interest in any of Borrower's assets.
Negotiate Items. Negotiate or discount all drafts, trade acceptances, promissory notes, or other indebtedness in which Borrower has an interest and receive cash or otherwise use the proceeds.
Apply for Letters of Credit. Apply for letters of credit from Bank.
Enter Derivative Transactions. Execute spot or forward foreign exchange contracts, interest rate swap agreements, or other derivative transactions.
Issue Warrants. Issue warrants for Borrower's capital stock.

Further Acts. Designate other individuals to request advances, pay fees and costs and execute other documents or agreements (including documents or agreement that waive Borrower's right to a jury trial) they believe to be necessary to effect these resolutions.

RESOLVED FURTHER, that all acts authorized by the above resolutions and any prior acts relating thereto are ratified.

5. The persons listed above are Borrower's officers or employees with their titles and signatures shown next to their names.

By: _____
Name:
Title:

*** *If the Secretary, Assistant Secretary or other certifying officer executing above is designated by the resolutions set forth in paragraph 4 as one of the authorized signing officers, this Certificate must also be signed by a second authorized officer or director of Borrower.*

I, the _____ of Borrower, hereby certify as to paragraphs 1 through 5 above, as of the date set forth above.

By: _____
Name:
Title:

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is entered into as of March 14, 2017, by and between Alpine Immune Sciences, Inc., a Delaware corporation ("Company"), and Dr. Mitchell H. Gold, an individual ("Executive"). Each of Company and Executive may be referred to individually as a "party" or collectively as the "parties."

WITNESSETH:

WHEREAS, Executive has consistently served the Company as its Executive Chairman since January 16, 2015;

WHEREAS, Executive began serving the Company as acting Chief Executive Officer on June 29, 2016 on what was initially anticipated to be an interim basis; however, the parties now wish to extend Executive's service as Chief Executive Officer of the Company and enter into this Agreement in order to set forth the terms and conditions under which the Executive shall be employed by Company.

AGREEMENT:

NOW, THEREFORE, for and in consideration of the mutual promises, covenants and obligations contained herein, Company and Executive agree as follows:

ARTICLE 1 EMPLOYMENT AND DUTIES

1.1 Employment; Effective Date. Executive shall continue to be employed by the Company throughout the Term (as defined below). Effective as of January 20, 2017 (the "Effective Date"), and continuing until the time set forth in Article 2 of this Agreement, Executive's employment by Company shall be subject to the terms and conditions of this Agreement.

1.2 Position. From and after the Effective Date, Company shall employ Executive as the Executive Chairman and Chief Executive Officer of the Company, initially reporting to the Company's board of directors (the "Board").

1.3 Duties and Services. From and after the Effective Date, executive agrees to serve the Company as the Executive Chairman and Chief Executive Officer of the Company and to perform diligently and to the best of his abilities the duties and services appertaining to such offices, as well as such additional duties and services appropriate to such offices which the parties mutually may agree upon from time to time. Executive's employment shall also be subject to the policies maintained and established by Company that are of general applicability to Company's executive employees, as such policies may be amended from time to time.

1.4 Other Interests. Executive agrees, during the period of his employment by Company, to devote substantially all of his business time, energy and best efforts to the business and affairs of Company and its affiliates and not to engage, directly or indirectly, in any other business or businesses, whether or not similar to that of the Company, except with the consent of

the Board, which consent shall not be unreasonably withheld. The foregoing notwithstanding, the parties recognize and agree that Executive may engage in charitable and civic pursuits without the consent of the Board, as long as Executive is not actively involved in the operation of such businesses and such pursuits do not conflict with the business and affairs of Company or its affiliates or interfere with Executive's performance of his duties hereunder, which shall be in the determination of the Board whose approval shall not be unreasonably withheld.

1.5 Duty of Loyalty. Executive acknowledges and agrees that Executive owes a fiduciary duty of loyalty to act at all times in the best interests of Company. In keeping with such duty, Executive shall make full disclosure to Company of all business opportunities pertaining to Company's business and shall not appropriate for Executive's own benefit business opportunities concerning Company's business.

ARTICLE 2 TERM AND TERMINATION OF EMPLOYMENT

2.1 Term. The initial term of employment under this Agreement (the "Initial Term") shall be for the period beginning on the Effective Date and ending on the third (3rd) anniversary of the Effective Date, unless earlier terminated as provided in paragraph 2.2. The employment term hereunder shall automatically be extended for successive one (1)-year periods commencing with the third (3rd) anniversary of the Effective Date ("Extension Terms" and, collectively with the Initial Term, the "Term") unless earlier terminated in accordance with this Agreement.

2.2 Company's Right to Terminate. Notwithstanding the provisions of paragraph 2.1, Company shall have the right to terminate Executive's employment under this Agreement for any of the following reasons:

(i) upon Executive's death;

(ii) upon Executive's disability, which shall mean Executive's becoming incapacitated by accident, sickness, or other circumstances which renders him mentally or physically incapable of performing the duties and services required of him hereunder for ninety (90) or more days (whether or not consecutive) out of any consecutive one hundred eighty (180)-day period, unless any of the days would constitute leave under the Family and Medical Leave Act;

(iii) for "Cause," which shall mean Executive has (A) engaged in gross negligence, gross incompetence or willful misconduct in the performance of the duties required of him hereunder; (B) refused without proper reason to perform the reasonable and lawful duties and reasonable and lawful responsibilities required of him hereunder causing material injury to the Company or its affiliates (monetarily or otherwise), and failed to cure such breach (in the event that such breach is capable of being cured) within thirty (30) days following written receipt of notice from the Company setting forth in reasonable detail the nature of such breach; (C) materially breached any provision of this Agreement and failed to cure such breach (in the event that such breach is capable of being cured) within thirty (30) days following receipt of notice from the Company setting forth in reasonable detail the nature of such breach; (D) willfully engaged in conduct that is materially injurious to the Company or its affiliates (monetarily or otherwise); (E) committed an act of fraud,

embezzlement or willful breach of fiduciary duty to the Company or an affiliate (including the unauthorized disclosure of confidential or proprietary material information of the Company or an affiliate); or (F) been convicted of (or pleaded no contest to) a crime involving fraud, dishonesty or moral turpitude or any felony; or

(iv) at any time for any other reason, or for no reason whatsoever, in the sole discretion of the Board.

2.3 **Executive's Right to Terminate**. Notwithstanding the provisions of paragraph 2.1, Executive shall have the right to terminate his employment under this Agreement for any of the following reasons:

(i) for "Good Reason," which shall mean, in connection with or based upon, without Executive's consent, (A) a material diminution in Executive's Base Salary (as defined below), other than in connection with an across the board salary reduction or deferral that applies proportionately to all employees of the Company in conjunction with a capital shortfall; (B) a material diminution in Executive's responsibilities, duties or authority, including a diminution in Executive's job title or reporting relationship; or (C) a material breach by the Company of any material provision of this Agreement; or

(ii) at any time for any other reason, or for no reason whatsoever, in the sole discretion of Executive.

2.4 **Notice of Termination**. If the Company desires to terminate Executive's employment hereunder at any time it shall do so by giving a thirty (30)-day written notice to Executive that it has elected to terminate Executive's employment hereunder and stating the effective date and reason for such termination, provided, however, that that no such action shall alter or amend any other provisions hereof or rights arising hereunder; and provided, further, however, that the Company may terminate Executive's employment relationship with the Company immediately upon written notice to Executive in the event the Company terminates Executive's employment for Cause and no cure period applies. If Executive desires to terminate his employment hereunder at any time he shall do so by giving a thirty (30)-day written notice to the Company that he has elected to terminate his employment hereunder and stating the effective date and reason for such termination, provided, however that no such action shall alter or amend any other provisions hereof or rights arising hereunder. In the case of any notice by Executive of his intent to terminate his employment hereunder for Good Reason, Executive shall provide Company with notice of the existence of the condition(s) constituting the Good Reason within thirty (30) days after the initial existence of such condition(s) and the Company shall have thirty (30) days following Executive's provision of such notice to remedy such condition(s). If the Company remedies the condition(s) constituting the Good Reason within such thirty (30)-day period, then Executive's employment hereunder shall continue and his notice of termination shall become void and of no further effect. If the Company does not remedy the condition(s) constituting the Good Reason within such thirty (30)-day period, Executive's employment with the Company shall terminate on the date that is thirty-one (31) days following the date of Executive's notice of termination and Executive shall be entitled to receive the payments and benefits described in paragraph 4.3.

2.5 **Deemed Resignations**. Unless otherwise agreed and approved by the Board, any termination of Executive's employment shall constitute an automatic resignation of Executive as an officer of the Company and each affiliate of the Company, and if applicable, an automatic resignation of Executive from the Board in his capacity as the "CEO Director."

ARTICLE 3 COMPENSATION AND BENEFITS

3.1 **Base Salary**. During the Term, the Executive shall receive an initial base salary at a rate of U.S. Three Hundred Thousand Dollars (U.S. $300,000) per annum, and such salary shall be paid in accordance with the customary payroll practices of the Company, subject to annual review by the Board in its sole discretion (the "Base Salary").

3.2 **Initial Stock Option Grant**. In connection with the execution of this Agreement, the Company will recommend that the Board grant Executive an option (the "Initial Option") to purchase up to six hundred five thousand (605,000) shares of the Company's Common Stock (the "Common Stock"), subject to approval of the Board and to the terms of the Company's 2015 Stock Plan and Stock Option Agreement, with an exercise price per share equal to the fair market value of the Common Stock on the date of grant (as determined in good faith by the Board). Unless otherwise determined by the Board, the Initial Option will vest as follows:

(i) Vesting Schedule. One-fourth (1/4th) of the Initial Option shall vest and become exercisable on the twelve (12)-month anniversary of the Effective Date, and one thirty-sixth (1/36th) of the remaining number of shares shall vest each month thereafter, such that one hundred percent (100%) of the shares subject to the Initial Option shall be vested and exercisable as of the four (4) year anniversary of the Effective Date. Subject to the provisions of Section 3.2(ii) below, continued vesting of the Initial Option will stop on the date Executive's employment or consulting relationship with the Company is terminated; provided, however, that if Executive continues to serve as the Executive Chairman of the Board following such termination then vesting shall continue during the period of such continued Board service.

(ii) Double Trigger Acceleration. In the event of a Change of Control (as defined below), if: (1) Executive is terminated without Cause by the Company or the successor corporation or a parent or subsidiary of such successor corporation of the Company (the "Successor Corporation") within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the Change of Control transaction; or (2) Executive terminates his employment or consulting relationship with the Company or the Successor Corporation, each as applicable, for Good Reason within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the transaction, then the Initial Option or any cancelled, assumed, or substituted Option held by Executive in lieu of the Initial Option at the time of Executive's termination shall become fully accelerated and fully vested immediately prior to the effective date of termination. As used herein, "Change of Control" shall mean a sale of all or substantially all of the Company's assets, or any stock sale, merger, or consolidation of the Company with or into another corporation or business entity other than a stock sale, merger, or consolidation in which the holders of more than fifty percent

(50%) of the shares of capital stock of the Company outstanding immediately prior to such transaction continue to hold (either by the voting securities remaining outstanding or by their being converted into voting securities of the surviving entity) more than fifty percent (50%) of the total voting power represented by the voting securities of the Company, or such surviving entity, outstanding immediately after such transaction; provided, however, that a bona fide equity financing by the Company will not be deemed to be a Change of Control.

3.3 **Additional Option Grant**. In addition to the Initial Option, the Company will recommend that the Board grant Executive an additional option at the Second Tranche Closing (as defined in that certain Alpine Immune Sciences, Inc. Series A Preferred Stock Purchase Agreement dated as of June 10, 2016) to purchase that number of shares of Common Stock that, when accumulated with the Initial Option, will equal 5% of the Company's fully-diluted capitalization, as measured immediately following the Second Tranche Closing (the "Additional Option"). The Additional Option shall be subject to approval of the Board and to the terms of the Company's 2015 Stock Plan and Stock Option Agreement, with an exercise price per share equal to the fair market value of the Common Stock on the date of grant (as determined in good faith by the Board). Unless otherwise determined by the Board, the Additional Option will vest as follows:

(i) Vesting Schedule. One-fourth (1/4th) of the Additional Option shall vest and become exercisable on the twelve (12)-month anniversary of the Effective Date, and one thirty-sixth (1/36th) of the remaining number of shares shall vest each month thereafter, such that one hundred percent (100%) of the shares subject to the Additional Option shall be vested and exercisable as of the four (4) year anniversary of the Effective Date. Subject to the provisions of Section 3.3(ii) below, continued vesting of the Additional Option will stop on the date Executive's employment or consulting relationship with the Company is terminated; provided, however, that if Executive continues to serve as the Executive Chairman of the Board following such termination then vesting shall continue during the period of such continued Board service.

(ii) Double Trigger Acceleration. In the event of a Change of Control (as defined below), if: (1) Executive is terminated without Cause by the Company or the Successor Corporation within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the Change of Control transaction; or (2) Executive terminates his employment or consulting relationship with the Company or the Successor Corporation, each as applicable, for Good Reason within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the transaction, then the Additional Option or any cancelled, assumed, or substituted Option held by Executive in lieu of the Additional Option at the time of Executive's termination shall become fully accelerated and fully vested immediately prior to the effective date of termination.

3.4 **Subsequent Grants**. Subject to the discretion of the Board of Directors, Executive shall be eligible to receive future grants of stock options or purchase rights from time to time in the future, on such terms and subject to such conditions as the Board shall determine as of the date of any such grant.

3.5 **Benefit Plan Eligibility**. Executive shall be entitled to: (i) participate in the Company's healthcare coverage plan and 401(k) or similar retirement plan; and (ii) receive paid vacation and sick leave, with levels to be determined by the Company's Board (or, if established, the Compensation Committee), all upon the same terms as such benefits are made available to other senior executives of the Company.

3.6 **Reimbursement of Expenses**. Executive shall be entitled to payment or reimbursement of all reasonable, ordinary, and necessary business expenses incurred by Executive in the performance of his responsibilities and the promotion of the Company's business, including but not limited to professional expenses such as memberships and medical licensing, provided that those expenses are consistent with the Company policy and limits. Executive shall submit to the Company periodic statements of all expenses so incurred. Subject to such reviews as the Company may deem necessary, the Company shall reimburse Executive the full amount of any such expenses advanced by him in the ordinary course of business.

ARTICLE 4 EFFECT OF TERMINATION ON COMPENSATION

4.1 **In General**. Upon a termination of Executive's employment for any reason, the Executive (or the Executive's estate) shall be entitled to receive the sum of Executive's Base Salary through the date of termination not theretofore paid; any unpaid expense reimbursements owed to the Executive under paragraph 3.5; and any amount arising from Executive's participation in, or benefits under, any employee benefit plans, programs or arrangements under paragraph 3.4 (including without limitation, any disability or life insurance benefit plans, programs or arrangements), which amounts shall be payable in accordance with the terms and conditions of such employee benefit plans, programs or arrangements. Except as otherwise provided in this Article 4, all of Executive's rights to salary, fringe benefits and other compensation hereunder shall cease upon such date of termination, other than those expressly required under applicable law.

4.2 **Termination by the Company**. If Executive's employment hereunder shall be terminated by the Company at any time for reasons other than those provided in Sections 2.2(i), (ii), or (iii), then the Company shall: (a) provide for the participation of Executive and/or his dependents, as applicable, in the Company's medical and dental benefits in which they are enrolled at the time of such termination for a period of three (3) months following the termination date of Executive's employment, at the Company's expense, to the extent that such continuation is permitted at the time of such termination under the terms of such Company benefit plans and insurance arrangements, and if such continuation is not permitted then the Company shall reimburse Executive for the cost of Executive procuring the same or substantially similar benefits himself, unless Executive is otherwise eligible to receive benefit coverage of a roughly equivalent nature by virtue of his employment with any subsequent employer; and (b) accelerate the vesting of Executive's Initial Option (and the Additional Option, if granted) by a period of twelve (12) months, provided Executive agrees to remain reasonably available to consult with the Company, on an as needed as requested basis, for a period of twelve (12) months, on any issues reasonably requested by the Company.

4.3 **Termination by Executive**. If Executive's employment hereunder shall be terminated by Executive for Good Reason, then the Company shall: (a) provide for the

participation of Executive and/or his dependents, as applicable, in the Company's medical and dental benefits in which they are enrolled at the time of such termination for a period of three (3) months following the termination date of Executive's employment, at the Company's expense, to the extent that such continuation is permitted at the time of such termination under the terms of such Company benefit plans and insurance arrangements, and if such continuation is not permitted then the Company shall reimburse Executive for the cost of Executive procuring the same or substantially similar benefits himself, unless Executive is otherwise eligible to receive benefit coverage of a roughly equivalent nature by virtue of his employment with any subsequent employer; and (b) accelerate the vesting of Executive's Initial Option (and the Additional Option, if granted) by a period of twelve (12) months, provided Executive agrees to remain reasonably available to consult with the Company, on an as needed as requested basis, for a period of twelve (12) months, on any issues reasonably requested by the Company.

4.4 **Release and Full Settlement**. Anything to the contrary herein notwithstanding, as a condition to the receipt of the additional termination payments and benefits under paragraph 4.2 or 4.3 hereof, as applicable, Executive shall first execute a release, in the form established by the Board, releasing the Board, the Company, and the Company's parent corporation, subsidiaries, affiliates, and their respective shareholders, owners, partners, officers, directors, employees, attorneys and agents from any and all claims and from any and all causes of action of any kind or character including, but not limited to, all claims or causes of action arising out of Executive's employment with the Company or its affiliates or the termination of such employment, but excluding all claims to vested benefits and payments Executive may have under any compensation or benefit plan, program or arrangement, including this Agreement. Executive shall provide such release no later than thirty (30) days after the date of his termination of employment with the Company and, as a condition to the Company's obligation to provide the additional termination payments and benefits in accordance with paragraphs 4.2 and 4.3, Executive shall not revoke such release. The performance of the Company's obligations hereunder and the receipt of any termination payments and benefits provided under paragraphs 4.2 and 4.3 shall constitute full settlement of all such claims and causes of action, subject to the limitations set forth above.

4.5 **Liquidated Damages**. In light of the difficulties in estimating the damages for an early termination of Executive's employment under this Agreement, the Company and Executive hereby agree that the payments and benefits, if any, to be received by Executive pursuant to this Article 4 shall be received by Executive as liquidated damages.

4.6 **Section 409A Matters**. Notwithstanding any provision in this Agreement to the contrary, if Executive is a specified employee (within the meaning of Section 409A(a)(2)(B)(i) of the Internal Revenue Code of 1986, as amended (the "Code"), and applicable administrative guidance thereunder and determined in accordance with any method selected by the Company that is permitted under the regulations issued under Section 409A of the Code), and the payment of any amount or benefit under this Agreement to or on behalf of Executive would be subject to additional taxes and interest under Section 409A of the Code because the timing of such payment is not delayed as provided in Section 409A(a)(2)(B)(i) of the Code and the regulations thereunder, then any such payment or benefit that Executive would otherwise be entitled to during the first six (6) months following the date of Executive's separation from service (within the meaning of Section 409A(a)(2)(A)(i) of the Code and applicable administrative guidance

thereunder) shall be accumulated and paid or provided, as applicable, on the date that is six (6) months after Executive's separation from service (or if such date does not fall on a business day of the Company, the next following business day of the Company), or such earlier date upon which such amount can be paid or provided under Section 409A of the Code without being subject to such additional taxes and interest; provided, however, that Executive shall be entitled to receive the maximum amount permissible under Section 409A of the Code and the applicable administrative guidance thereunder during the six-month period following his separation from service that will not result in the imposition of any additional tax or penalties on such amount. For all purposes of this Agreement, Executive shall be considered to have terminated employment with the Company when Executive incurs a "separation from service" with the Company within the meaning of Section 409A(a)(2)(A)(i) of the Code and the applicable administrative guidance issued thereunder. To the extent that any reimbursements pursuant to this Agreement are taxable to the Executive, any reimbursement payment due to the Executive pursuant to such provision shall be paid to the Executive on or before the last day of the Executive's taxable year following the taxable year in which the related expense was incurred. The Executive agrees to provide prompt notice to the Company of any such expenses (and any other documentation that the Company may reasonably require to substantiate such expenses) in order to facilitate the Company's timely reimbursement of the same. The reimbursements and benefits pursuant to this Agreement are not subject to liquidation or exchange for another benefit and the amount of such reimbursements and benefits that the Executive receives in one taxable year shall not affect the amount of such reimbursements or benefits that the Executive receives in any other taxable year. To the extent that Section 409A of the Code is applicable to this Agreement, the provisions of this Agreement shall be interpreted as necessary to comply with such section and the applicable administrative guidance issued thereunder.

4.7 **Other Benefits**. This Agreement governs the rights and obligations of Executive and the Company with respect to Executive's Base Salary, initial stock option grant, benefits, and certain perquisites of employment. Except as expressly provided herein, Executive's rights and obligations both during the term of his employment and thereafter with respect to his direct and indirect ownership rights in the Company, and other benefits under the plans and programs maintained by the Company, shall be governed by the separate agreements, plans and the other documents and instruments governing such matters.

ARTICLE 5 PROTECTION OF CONFIDENTIAL INFORMATION

5.1 **PIIA**. Executive acknowledges and agrees that all compensation paid to Executive by the Company pursuant to this Agreement is conditioned upon Executive's confirmation of that certain Proprietary Information and Inventions Agreement previously executed by the parties on January 16, 2015, a copy of which is attached as Exhibit A (the "PIIA"), which is incorporated herein by this reference. Executive hereby covenants to abide by the terms and conditions of the PIIA, including, but not limited to, the assignment of inventions and confidentiality provisions of the PIIA as if re-executed by the parties on the Effective Date.

5.2 **Remedies**. Executive acknowledges that money damages would not be sufficient remedy for any breach of this Article 5 by Executive, and the Company or its affiliates shall be entitled to enforce the provisions of this Article 5 by terminating payments then owing to Executive under this Agreement or otherwise and to specific performance and injunctive relief as

remedies for such breach. Such remedies shall not be deemed the exclusive remedies for a breach of this Article 5 but shall be in addition to all remedies available at law or in equity, including the recovery of damages from Executive and his agents.

ARTICLE 6 NON-COMPETITION AND NON-SOLICITATION OBLIGATIONS

6.1 **Non-Competition and Non-Solicitation Obligations**. As part of the consideration for the compensation and benefits to be paid to Executive hereunder; to protect the trade secrets and confidential information of the Company that have been or will in the future be disclosed or entrusted to Executive, the business good will of the Company and its affiliates that has been and will in the future be developed in Executive, or the business opportunities that have been and will in the future be disclosed or entrusted to Executive by the Company and its affiliates; the Company and Executive agree to the following provisions:

(i) Executive hereby agrees that during the term of his direct or indirect employment or consulting relationship with the Company (as the case may be), and for a period of twelve (12) months following the termination of his employment or consulting relationship with the Company (as the case may be) for any reason, Executive shall not directly or indirectly solicit, induce, recruit, hire or encourage any of the Company's employees or consultants to terminate their relationship with the Company, or attempt any of the foregoing, either for himself or any other person or entity. For a period of twelve (12) months following termination of Executive's employment or consulting relationship with the Company (as the case may be) for any reason, Executive hereby covenants not to solicit any licensor to or customer of the Company or licensee of the Company's products, that are known to him with respect to any business, products or services that are competitive to the products or services offered by the Company or under development as of the date of termination of his relationship with the Company. In the event that Executive's employment with the Company is terminated by the Company without Cause or if Executive resigns for Good Reason, then the twelve (12) month periods referenced above in this section shall each be reduced to six (6) months.

(ii) Executive hereby agrees that during the term of his direct or indirect employment or consulting relationship with the Company (as the case may be) and for twelve (12) months following the termination of his employment or consulting relationship with the Company (as the case may be) for any reason, he will not, without the Company's prior written consent, directly or indirectly work on any products or services that are competitive with products or services (a) being commercially developed or exploited by the Company during his employment or consultancy with the Company (as the case may be) and (b) on which he worked or about which he learned Proprietary Information (as defined in the PIIA) during his employment or consultancy with the Company (as the case may be). In the event that Executive's employment with the Company is terminated by the Company without Cause or if Executive resigns for Good Reason, then the twelve (12) month period referenced above in this section shall be reduced to six (6) months.

6.2 **Enforcement and Remedies**. Executive acknowledges that money damages would not be sufficient remedy for any breach of this Article 6 by Executive, and the Company shall be entitled to enforce the provisions of this Article 6 by terminating any payments then

owing to Executive under this Agreement and/or to specific performance and injunctive relief as remedies for such breach. Such remedies shall not be deemed the exclusive remedies for a breach of this Article 6, but shall be in addition to all remedies available at law or in equity to the Company, including, without limitation, the recovery of damages from Executive and Executive's agents involved in such breach and remedies available to the Company pursuant to other agreements with Executive.

6.3 **Reformation**. It is expressly understood and agreed that the Company and Executive consider the restrictions contained in this Article 6 to be reasonable and necessary to protect the proprietary information of the Company and its affiliates. Nevertheless, if any of the aforesaid restrictions are found by a court having jurisdiction to be unreasonable, or overly broad as to geographic area or time, or otherwise unenforceable, the parties intend for the restrictions therein set forth to be modified by such courts so as to be reasonable and enforceable and, as so modified by the court, to be fully enforced.

ARTICLE 7 NONDISPARAGEMENT

Executive agrees not to disparage the Company, any of its products or practices, or any of its directors, officers, employees, agents, representatives, stockholders or affiliates, either orally or in writing, at any time and the Company and its Affiliates shall not and shall instruct members of the Board and executive officers of the Company not to disparage the Executive, either orally or in writing, at any time; *provided*, that, either party may confer in confidence with its legal representatives and make truthful statements as required by law or as required by any applicable rules of professional conduct.

ARTICLE 8 MISCELLANEOUS

8.1 **Notices**. For purposes of this Agreement, notices and all other communications provided for herein shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by United States registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

To the Company:	Alpine Immune Sciences, Inc. 600 Stewart St., Ste. 1503 Seattle, WA 98101
With copy to:	Van Katzman Ascent Law Partners, LLP 719 Second Ave, Ste. 1150 Seattle, WA 98104
To Executive:	Dr. Mitchell H. Gold 5754-63rd Ave. NE Seattle, WA 98105

or to such other address as either party may furnish to the other in writing in accordance herewith, except that notices or changes of address shall be effective only upon receipt.

8.2 **Applicable Law**. This Agreement is entered into under, and shall be governed for all purposes by the laws of the State of Washington.

8.3 **No Waiver**. No failure by either party hereto at any time to give notice of any breach by the other party of, or to require compliance with, any condition or provision of this Agreement shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time.

8.4 **Severability**. If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of that provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effect.

8.5 **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same agreement.

8.6 **Withholding of Taxes and Other Employee Deductions**. The Company may withhold from any benefits and payments made pursuant to this Agreement or otherwise all federal, state, city and other taxes as may be required pursuant to any law or governmental regulation or ruling and all other normal employee deductions made with respect to the Company's employees generally.

8.7 **Headings**. The paragraph headings have been inserted for purposes of convenience and shall not be used for interpretive purposes.

8.8 **Affiliate**. As used in this Agreement, the term "affiliate" shall mean any entity which owns or controls, is owned or controlled by, or is under common ownership or control with, the Company.

8.9 **Assignment**. This Agreement shall be binding upon and inure to the benefit of the Company and any successor of the Company, by merger or otherwise. This Agreement shall also be binding and inure to the benefit of Executive and his heirs. Except as provided in the preceding sentence, this Agreement, and the rights and obligations of the parties hereunder, are personal and neither this Agreement, nor any right, benefit, or obligation of either party hereto, shall be subject to voluntary or involuntary assignment, alienation or transfer, whether by operation of law or otherwise, without the prior written consent of the other party.

8.10 **Term**. This Agreement has a term co-extensive with the term of employment provided in Article 2. Termination shall not affect any right or obligation of any party which is accrued or vested prior to such termination. The provisions of paragraphs 2.5, 4.4 to 4.7 and Articles 5, 6, 7 and 8 shall survive any termination of this Agreement.

8.11 **Entire Agreement**. This Agreement, the PIIA, the 2015 Stock Plan and the Stock Option Agreement will constitute the entire agreement of the parties with regard to the subject matter hereof, and will contain all the covenants, promises, representations, warranties and agreements between the parties with respect to employment of Executive by the Company. Without limiting the scope of the preceding sentence, all understandings and agreements

preceding the date of execution of this Agreement and relating to the subject matter hereof are as of the Effective Date superseded by this Agreement and null and void and of no further force and effect. Any modification of this Agreement will be effective only if it is in writing and signed by the party to be charged.

8.12 **Liability Insurance**. The Company may maintain a directors' and officers' insurance liability policy throughout the term of this Agreement and may provide Executive with coverage under such policy consistent with those provided to other the Company directors and officers.

8.13 **Arbitration**.

(i) The Company and Executive agree to submit to final and binding arbitration any and all disputes or disagreements concerning the interpretation or application of this Agreement, the termination of this Agreement, or any other aspect of the Executive's employment relationship with Company. Any such dispute or disagreement will be resolved by arbitration in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association before a single arbitrator. Arbitration will take place in Seattle, Washington, unless the parties mutually agree to a different location. Company and Executive agree that the decision of the arbitrator will be final and binding on both parties. Any court having jurisdiction may enter a judgment upon the award rendered by the arbitrator. The costs of the proceedings shall be borne equally by the parties unless the arbitrator orders otherwise.

(ii) Notwithstanding the provisions of paragraph 8.13(i), Company may, if it so chooses, bring an action in any court of competent jurisdiction for temporary or preliminary injunctive relief to enforce Executive's obligations under Articles 5 (including the PIIA), 6 or 7 hereof, pending a decision by the arbitrator in accordance with paragraph 8.13(i).

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement to be effective as of the Effective Date.

EXECUTIVE:

DR. MITCHELL H. GOLD,
an individual

By: /s/ Dr. Mitchell H. Gold
Name: Dr. Mitchell H. Gold

COMPANY:

ALPINE IMMUNE SCIENCES, INC.,
a Delaware corporation

By: /s/ Jay Venkatesan
Name: Jay Venkatesan
Its: President

EXHIBIT A

PIIA

Exhibit 10.33

ALPINE IMMUNE SCIENCES, INC.
AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (the "**Agreement**") is entered into as of January 1, 2018 (the "**Effective Date**") between Alpine Immune Sciences, Inc. (the "**Company**"), and Mitchell H. Gold ("**Executive**") (collectively referred to as the "**Parties**" or individually as a "**Party**").

R E C I T A L S

WHEREAS, the Company desires to continue to employ Executive as its Chief Executive Officer and Executive Chairman, and to enter into an agreement embodying the terms of such continued at-will employment;

WHEREAS, the Company desires for Executive to continue to serve as a member of its Board of Directors during the Employment Term (as defined below); and

WHEREAS, Executive desires to accept such continued employment and enter into such an agreement.

A G R E E M E N T

NOW, THEREFORE, in consideration of the premises and mutual covenants herein and for other good and valuable consideration, the Parties agree as follows:

1. Duties and Scope of Employment.

(a) Positions and Duties. As of the Effective Date, Executive will continue to serve as Chief Executive Officer and Executive Chairman of the Company, subject to the terms and conditions of this Agreement. Executive will continue to render such business and professional services in the performance of his duties, consistent with Executive's position within the Company, as shall continue to be reasonably be assigned to him by the Company's Board of Directors (the "**Board**") and, as such, from and after the date hereof, shall report directly to and shall be subject to the direction of the Board. The period of Executive's continued at-will employment under the terms of this Agreement is referred to herein as the "Employment Term."

(b) Obligations. During the Employment Term, Executive will continue to perform his duties faithfully and to the best of his ability and will continue to devote his full business efforts and time to the Company. For the duration of the Employment Term, and as before, Executive agrees not to actively engage in any other employment, occupation or consulting activity for any direct or indirect remuneration without the prior written approval of the Board.

2. At-Will Employment. Subject to Sections 6 below, the parties agree that Executive's employment with the Company will continue to be "at-will" employment and, as such, may be terminated at any time with or without cause or notice, for any reason or no reason. Executive further understands and agrees that, as before, neither his job performance nor promotions, commendations, bonuses or the like from the Company give rise to or in any way serve as the basis for modification, amendment, or extension, by implication or otherwise, of his employment with the Company.

3. Compensation.

(a) Base Salary. During the Employment Term, the Company will pay Executive as compensation for his services a base salary at a rate of $400,000 per year, as modified from time to time at the discretion of the Board or a duly constituted committee of the Board (the "**Base Salary**"). The Base Salary, as before, will be paid in regular installments in accordance with the Company's normal payroll practices (subject to required withholding). Any modification in Base Salary (together with the then existing Base Salary) shall serve as the "Base Salary" for future employment under this Agreement. The first and last payment will be adjusted, if necessary, to reflect a commencement or termination date other than the first or last working day of a pay period.

(b) Annual Bonus. During the Employment Term, for each calendar year, Executive shall be eligible to earn an annual discretionary bonus based upon the achievement of certain Company and individual goals as determined by the Company in its discretion after consultation with Executive (the "**Annual Bonus**"). The Board will determine in its discretion whether the performance objectives for any Annual Bonus have been achieved. In connection with the Annual Bonus, subject to the corresponding performance levels being achieved, the Executive shall be eligible for an annual target bonus of up to 50% of the Executive's Base Salary (the "**Target Bonus**") with an annual maximum bonus equal to 100% of the Target Bonus. The Board does, however, retain the option of increasing the Annual Bonus in any given year by an additional discretionary amount in the event Executive significantly exceeds the above-referenced performance objectives for that year, as determined, in all cases, by the Board in its sole discretion. Any such Annual Bonus (including any additional discretionary increase, if awarded by the Board) will be determined and, to the extent earned, paid on an annual basis, at the time and manner in which such bonuses are normally paid to employees at Executive's level, but in no event will such payment be made later than March 15 of the year following the year such Annual Bonus was earned. Receipt of any Annual Bonus is contingent upon Executive's continued employment with the Company through the date the Annual Bonus is earned and any Annual Bonus for a calendar year will not be considered earned if Executive is terminated prior to December 1. No "pro-rated" or partial bonus will be provided in the event of Executive's earlier separation from employment, except as provided by this Agreement.

(c) Equity. The Executive acknowledges and agrees that Executive has been previously awarded the options to purchase shares of the Company's common stock detailed in Schedule 1 hereto, subject to the terms, definitions and conditions, including vesting requirements, of the relevant stock option agreements between Executive and the Company (the "**Option Agreements**") and the Company's Amended and Restated 2015 Stock Plan and 2015 Equity Incentive Plan, as applicable (collectively, the "**Equity Plans**").

4. Employee Benefits. During the Employment Term, Executive will be continue to be eligible to participate in the employee benefit plans currently and hereafter maintained by the Company of general applicability to similarly-situated senior executives of the Company, subject to the terms and conditions of the applicable policies. The Company, as before, reserves the right to cancel or change the benefit plans and programs it offers to its employees at any time.

5. Business Expenses. During the Employment Term, the Company will reimburse Executive for reasonable business travel, entertainment or other business expenses incurred by Executive in the furtherance of or in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policy as in effect from time to time. Except as expressly provided otherwise herein, no reimbursement payable to the Executive pursuant to any provision of this Agreement or pursuant to any plan or arrangement of the Company shall be paid later than the last day of the calendar year following the calendar year in which the related expense was incurred, and no such reimbursement during any calendar year shall affect the amounts eligible for reimbursement in any other calendar year, except, in each

case, to the extent that the right to reimbursement does not provide for a "deferral of compensation" within the meaning of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**"), and the final regulations and any formal guidance issued thereunder ("**Section 409A**").

6. Termination and Severance. As discussed above, the Company shall be entitled to terminate Executive at any time and for any reason, and Executive shall be entitled to resign at any time and for any reason. Executive may, however, be entitled to receive certain severance benefits in connection with his separation from employment under the Company's Change of Control and Severance Policy (the "**Severance Policy**"). Any such severance, if applicable, will be subject to the terms and conditions of the Severance Policy, as may be amended or modified from time to time.

7. Company Matters.

(a) Proprietary Information and Inventions. Executive acknowledges and agrees that, as a condition of his continued employment, he is required to sign and abide by the terms of the At-Will Employment, Confidential Information, Invention Assignment, and Arbitration Agreement (the "**Confidentiality Agreement**"), including the arbitration agreement and provisions governing the nondisclosure of confidential information and restrictive covenants contained therein. A copy of the Confidentiality Agreement is attached hereto as Exhibit A.

(b) Ventures. If, during his employment and as before, Executive is engaged in or associated with planning or implementing of any project, program or venture involving the Company and any third parties, all rights in such project, program or venture shall belong to the Company (or third party, to the extent provided in any agreement between the Company and the third party). Except as approved by the Board in writing, Executive shall not be entitled to any interest in such project, program or venture or to any commission, finder's fee or other compensation in connection therewith other than the salary or other compensation to be paid to Executive as provided in this Agreement.

(c) Notification of New Employer. In the event that Executive leaves the employ of the Company, Executive grants consent to notification by the Company to Executive's new employer about his rights and obligations under this Agreement and the Confidentiality Agreement.

8. ARBITRATION. IN CONSIDERATION OF EXECUTIVE'S EMPLOYMENT WITH THE COMPANY, ITS PROMISE TO ARBITRATE ALL EMPLOYMENT-RELATED DISPUTES AND EXECUTIVE'S RECEIPT OF THE COMPENSATION, PAY RAISES AND OTHER BENEFITS PAID TO EXECUTIVE BY THE COMPANY, AT PRESENT AND IN THE FUTURE, EXECUTIVE AGREES THAT ANY AND ALL CONTROVERSIES, CLAIMS, OR DISPUTES WITH ANYONE (INCLUDING THE COMPANY AND ANY EMPLOYEE, OFFICER, DIRECTOR, SHAREHOLDER OR BENEFIT PLAN OF THE COMPANY, IN THEIR CAPACITY AS SUCH OR OTHERWISE), ARISING OUT OF, RELATING TO, OR RESULTING FROM EXECUTIVE'S EMPLOYMENT WITH THE COMPANY OR THE TERMINATION OF EXECUTIVE'S EMPLOYMENT WITH THE COMPANY, INCLUDING ANY BREACH OF THIS AGREEMENT, SHALL BE SUBJECT TO BINDING ARBITRATION, AS SET FORTH IN THE CONFIDENTIALITY AGREEMENT.

9. Assignment. This Agreement will be binding upon and inure to the benefit of (a) the heirs, executors and legal representatives of Executive upon Executive's death and (b) any successor of the Company. Any such successor of the Company will be deemed substituted for the Company under the terms of this Agreement for all purposes. For this purpose, "successor" means any person, firm, corporation or other business entity which at any time, whether by purchase, merger or otherwise, directly or indirectly acquires all or substantially all of the assets or business of the Company. None of the rights of Executive to receive any form of compensation payable pursuant to this Agreement may be assigned or transferred except

by will or the laws of descent and distribution. Any other attempted assignment, transfer, conveyance or other disposition of Executive's right to compensation or other benefits will be null and void.

10. Notices. All notices, requests, demands and other communications called for under this Agreement shall be in writing and shall be delivered personally by hand or by courier, mailed by United States first-class mail, postage prepaid, or sent by facsimile directed to the Party to be notified at the address or facsimile number indicated for such Party on the signature page to this Agreement, or at such other address or facsimile number as such Party may designate by ten (10) days' advance written notice to the other Parties hereto. All such notices and other communications shall be deemed given upon personal delivery, three (3) days after the date of mailing, or upon confirmation of facsimile transfer.

11. Severability. In the event that any provision hereof becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement will continue in full force and effect without said provision.

12. Integration. This Agreement, together with the Severance Policy, the Equity Plans, the Option Agreements and the Confidentiality Agreement, represents the entire agreement and understanding between the parties as to the subject matter herein and supersedes all prior or contemporaneous agreements whether written or oral, including the Employment Agreement dated as of March 14, 2017 by and between the Company and Executive (the "**Prior Employment Agreement**"). The Executive and Company acknowledge and agree that the Prior Employment Agreement shall be of no further force and effect. No waiver, alteration, or modification of any of the provisions of this Agreement will be binding unless in writing and signed by duly authorized representatives of the parties hereto.

13. Tax Withholding. All payments, as before, made pursuant to this Agreement will be subject to withholding of applicable taxes.

14. Waiver. No Party shall be deemed to have waived any right, power or privilege under this Agreement or any provisions hereof unless such waiver shall have been duly executed in writing and acknowledged by the Party to be charged with such waiver. The failure of any Party at any time to insist on performance of any of the provisions of this Agreement shall in no way be construed to be a waiver of such provisions, nor in any way to affect the validity of this Agreement or any part hereof. No waiver of any breach of this Agreement shall be held to be a waiver of any other subsequent breach

15. Governing Law. This Agreement will be governed by the laws of the State of Washington (with the exception of its conflict of law provisions).

16. Conflict Waiver. Each of the Parties to this Agreement understands that Wilson Sonsini Goodrich & Rosati, Professional Corporation ("**WSGR**") is serving as counsel to the Company in connection with the transactions contemplated hereby, and that discussion of such transactions with Executive could be construed to create a conflict of interest. By executing this Agreement, the Parties hereto acknowledge the potential conflict of interest and waive the right to claim any conflict of interest at a later date. Furthermore, by executing this Agreement, the Parties acknowledge that if a conflict of interest exists and any litigation arises between Executive and the Company, WSGR would represent the Company. Executive represents and warrants that he has had the opportunity to seek independent counsel in his review of this and all related agreements and that he is not relying on WSGR for any legal, tax or other advice relating to such agreements.

17. Acknowledgment. Executive acknowledges that he has had the opportunity to discuss this matter with and obtain advice from his legal counsel, has had sufficient time to, and has carefully read and fully understands all the provisions of this Agreement, and is knowingly and voluntarily entering into this Agreement. Executive further acknowledges and agrees that, as of the date hereof, the Company has paid or provided all earned

salary, wages, bonuses, accrued vacation/paid time off, leave, allowances, reimbursable expenses, commissions, stock, stock options, vesting, and any and all other benefits and compensation that may be due to Executive.

18. Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original, and all such counterparts shall constitute but one instrument.

19. Effect of Headings. The section and subsection headings contained herein are for convenience only and shall not affect the construction hereof.

20. Construction of Agreement. This Agreement has been negotiated by the respective Parties, and the language shall not be construed for or against either Party.

21. Section 409A. The Section 409A paragraph of the Severance Policy are incorporated herein by reference.

22. Protected Activity Not Prohibited. Executive understands that nothing in this Agreement, or any other agreement or policy with or by the Company, shall in any way limit or prohibit Executive from engaging in any Protected Activity. For purposes of this Agreement, "**Protected Activity**" shall mean filing a charge, complaint, or report with, or otherwise communicating, cooperating, or participating in any investigation or proceeding that may be conducted by, any federal, state or local government agency or commission, including the Securities and Exchange Commission, the Equal Employment Opportunity Commission, the Occupational Safety and Health Administration, and the National Labor Relations Board ("**Government Agencies**"). Executive understands that in connection with such Protected Activity, Executive is permitted to disclose documents or other information as permitted by law, and without giving notice to, or receiving authorization from, the Company. Notwithstanding the foregoing, Executive agrees to take all reasonable precautions to prevent any unauthorized use or disclosure of any information that may constitute Company confidential information under the Confidentiality Agreement to any parties other than the Government Agencies. Executive further understands that "Protected Activity" does not include the disclosure of any Company attorney-client privileged communications. Any language in the Confidentiality Agreement, or any other agreement or policy of the Company, regarding Executive's right to engage in Protected Activity that conflicts with, or is contrary to, this paragraph is superseded by this provision. In addition, pursuant to the Defend Trade Secrets Act of 2016, Executive is notified that an individual will not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (a) is made in confidence to a federal, state, or local government official (directly or indirectly) or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if (and only if) such filing is made under seal. In addition, an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the individual's attorney and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal and does not disclose the trade secret, except pursuant to court order.

23. Clawback Provisions. Notwithstanding any other provisions in this Agreement to the contrary, any incentive-based compensation, or any other compensation, paid to Executive pursuant to this Agreement or any other agreement or arrangement with the Company or any of its affiliates, which is subject to recovery under any law, government regulation or stock exchange listing requirement, will be subject to such deductions and clawback as may be required to be made pursuant to such law, government regulation or stock exchange listing requirement (or any policy adopted by the Company or any of their affiliates pursuant to any such law, government regulation or stock exchange listing requirement), including for any violations of the Confidentiality Agreement, if applicable.

[Remainder of page is intentionally blank; Signature page follows]

IN WITNESS WHEREOF, each of the Parties has executed this Agreement as of the day and year first above written.

"COMPANY"

ALPINE IMMUNE SCIENCES, INC.

By: /s/ Paul Rickey
Name: Paul Rickey
Its: Chief Financial Officer

Address: 201 Elliott Avenue West, Suite 230
Seattle, WA 98119

Fax Number: _____

"EXECUTIVE"

MITCHELL H. GOLD

/s/ Mitchell H. Gold
Mitchell H. Gold

Address: _____

_____

_____

Fax Number: _____

SCHEDULE 1

Grant Date	Number of Shares	Vesting Commencement Date	Exercise Price	Vesting Schedule
12/16/2015	149,069*	01/16/2015	$0.45	(1)
03/14/2017	300,624	01/20/2017	$0.65	(2)
04/12/2017	208,916	01/20/2017	$5.02	(2)
01/02/2018	70,000	01/02/2018	$11.31	(2)

* Includes options for 97,827 shares of common stock that were exercised prior to the Effective Date.

(1) 50% of the shares shall vest on May 16, 2016, and 1/32nd of the remaining shares shall vest on each monthly anniversary thereafter, such that all of the shares subject to the option shall be fully vested and exercisable as of the 4-year anniversary of the Vesting Commencement Date.

(2) 1/4th of the shares shall vest on the one-year anniversary of the Vesting Commencement Date, and 1/36th of the remaining shares shall vest on each monthly anniversary thereafter, such that 100% of the shares shall be fully vested and exercisable as of the 4-year anniversary of the Vesting Commencement Date.

EXHIBIT A

(CONFIDENTIALITY AGREEMENT)

Exhibit 10.34

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is entered into as of April 1, 2017, by and between Alpine Immune Sciences, Inc., a Delaware corporation ("Company"), and Paul Rickey, an individual ("Executive"). Each of Company and Executive may be referred to individually as a "party" or collectively as the "parties."

WITNESSETH:

WHEREAS, Executive and the Company are entering into this Agreement in order to set forth the terms and conditions under which the Executive shall be employed by Company.

AGREEMENT:

NOW, THEREFORE, for and in consideration of the mutual promises, covenants and obligations contained herein, Company and Executive agree as follows:

ARTICLE 1 EMPLOYMENT AND DUTIES

1.1 Employment; Effective Date. Executive's employment with the Company shall commence as of April 1, 2017 (the "Effective Date"). Effective as of the Effective Date, and continuing until the time set forth in Article 2 of this Agreement, Executive's employment by Company shall be subject to the terms and conditions of this Agreement.

1.2 Position. From and after the Effective Date, Company shall employ Executive as Senior Vice President and Chief Financial Officer of the Company, initially reporting to the CEO of the Company.

1.3 Duties and Services. From and after the Effective Date, executive agrees to serve the Company as the Senior Vice President and Chief Financial Officer of the Company and to perform diligently and to the best of his abilities the duties and services appertaining to such offices, as well as such additional duties and services appropriate to such offices which the parties mutually may agree upon from time to time. Executive's employment shall also be subject to the policies maintained and established by Company that are of general applicability to Company's executive employees, as such policies may be amended from time to time.

1.4 Other Interests. Executive agrees, during the period of his employment by Company, to devote substantially all of his business time, energy and best efforts to the business and affairs of Company and its affiliates and not to engage, directly or indirectly, in any other business or businesses, whether or not similar to that of the Company, except with the consent of the board of directors of the Company (the "Board"), which consent shall not be unreasonably withheld. The foregoing notwithstanding, the parties recognize and agree that Executive may engage in charitable and civic pursuits without the consent of the Board, as long as Executive is not actively involved in

the operation of such businesses and such pursuits do not conflict with the business and affairs of Company or its affiliates or interfere with Executive's performance of his duties hereunder, which shall be in the determination of the Board whose approval shall not be unreasonably withheld.

1.5 Duty of Loyalty. Executive acknowledges and agrees that Executive owes a fiduciary duty of loyalty to act at all times in the best interests of Company. In keeping with such duty, Executive shall make full disclosure to Company of all business opportunities pertaining to Company's business and shall not appropriate for Executive's own benefit business opportunities concerning Company's business.

ARTICLE 2 TERM AND TERMINATION OF EMPLOYMENT

2.1 Term. The initial term of employment under this Agreement (the "Initial Term") shall be for the period beginning on the Effective Date and ending on the third (3rd) anniversary of the Effective Date, unless earlier terminated as provided in paragraph 2.2. The employment term hereunder shall automatically be extended for successive one (1)-year periods commencing with the third (3rd) anniversary of the Effective Date ("Extension Terms" and, collectively with the Initial Term, the "Term") unless earlier terminated in accordance with this Agreement.

2.2 Company's Right to Terminate. Notwithstanding the provisions of paragraph 2.1, Company shall have the right to terminate Executive's employment under this Agreement for any of the following reasons:

(i) upon Executive's death;

(ii) upon Executive's disability, which shall mean Executive's becoming incapacitated by accident, sickness, or other circumstances which renders him mentally or physically incapable of performing the duties and services required of him hereunder for ninety (90) or more days (whether or not consecutive) out of any consecutive one hundred eighty (180)-day period, unless any of the days would constitute leave under the Family and Medical Leave Act;

(iii) for "Cause," which shall mean Executive has (A) engaged in gross negligence, gross incompetence or willful misconduct in the performance of the duties required of him hereunder; (B) refused without proper reason to perform the reasonable and lawful duties and reasonable and lawful responsibilities required of him hereunder causing material injury to the Company or its affiliates (monetarily or otherwise), and failed to cure such breach (in the event that such breach is capable of being cured) within thirty (30) days following written receipt of notice from the Company setting forth in reasonable detail the nature of such breach; (C) materially breached any provision of this Agreement and failed to cure such breach (in the event that such breach is capable of being cured) within thirty (30) days following receipt of notice from the Company setting forth in reasonable detail the nature of such breach; (D) willfully engaged in conduct that is materially injurious to the Company or its affiliates (monetarily or otherwise); (E) committed an act of fraud, embezzlement or willful breach of fiduciary duty to the Company or an affiliate (including

the unauthorized disclosure of confidential or proprietary material information of the Company or an affiliate); or (F) been convicted of (or pleaded no contest to) a crime involving fraud, dishonesty or moral turpitude or any felony; or

(iv) at any time for any other reason, or for no reason whatsoever, in the sole discretion of the Board.

2.3 **Executive's Right to Terminate**. Notwithstanding the provisions of paragraph 2.1, Executive shall have the right to terminate his employment under this Agreement for any of the following reasons:

(i) for "Good Reason," which shall mean, in connection with or based upon, without Executive's consent, (A) a material diminution in Executive's Base Salary (as defined below), other than in connection with an across the board salary reduction or deferral that applies proportionately to all employees of the Company in conjunction with a capital shortfall; (B) a material diminution in Executive's responsibilities, duties or authority, including a diminution in Executive's job title or reporting relationship; or (C) a material breach by the Company of any material provision of this Agreement; or

(ii) at any time for any other reason, or for no reason whatsoever, in the sole discretion of Executive.

2.4 **Notice of Termination**. If the Company desires to terminate Executive's employment hereunder at any time it shall do so by giving a thirty (30)-day written notice to Executive that it has elected to terminate Executive's employment hereunder and stating the effective date and reason for such termination, provided, however, that that no such action shall alter or amend any other provisions hereof or rights arising hereunder; and provided, further, however, that the Company may terminate Executive's employment relationship with the Company immediately upon written notice to Executive in the event the Company terminates Executive's employment for Cause and no cure period applies. If Executive desires to terminate his employment hereunder at any time he shall do so by giving a thirty (30)-day written notice to the Company that he has elected to terminate his employment hereunder and stating the effective date and reason for such termination, provided, however that no such action shall alter or amend any other provisions hereof or rights arising hereunder. In the case of any notice by Executive of his intent to terminate his employment hereunder for Good Reason, Executive shall provide Company with notice of the existence of the condition(s) constituting the Good Reason within thirty (30) days after the initial existence of such condition(s) and the Company shall have thirty (30) days following Executive's provision of such notice to remedy such condition(s). If the Company remedies the condition(s) constituting the Good Reason within such thirty (30)-day period, then Executive's employment hereunder shall continue and his notice of termination shall become void and of no further effect. If the Company does not remedy the condition(s) constituting the Good Reason within such thirty (30)-day period, Executive's employment with the Company shall terminate on the date that is thirty-one (31) days following the date of Executive's notice of termination and Executive shall be entitled to receive the payments and benefits described in paragraph 4.3.

2.5 **Deemed Resignations**. Unless otherwise agreed and approved by the Board, any termination of Executive's employment shall constitute an automatic resignation of Executive as an officer of the Company and each affiliate of the Company, and if applicable, an automatic resignation of any seat that he may hold on the Board (including any committee of the Board, if applicable).

ARTICLE 3 COMPENSATION AND BENEFITS

3.1 **Base Salary**. During the Term, the Executive shall receive an initial base salary at a rate of U.S. Two Hundred Seventy-Five Thousand Dollars (U.S. $275,000) per annum, and such salary shall be paid in accordance with the customary payroll practices of the Company, subject to annual review by the Board in its sole discretion (the "Base Salary").

3.2 **Initial Stock Option Grant**. In connection with the execution of this Agreement, the Company will recommend that the Board grant Executive an option (the "Option") to purchase up to one hundred fifty thousand (150,000) shares of the Company's Common Stock (the "Common Stock"), subject to approval of the Board and to the terms of the Company's Amended and Restated 2015 Stock Plan, as amended, and the terms of a Stock Option Agreement to be entered into by and between the Company and Executive, with an exercise price per share equal to the fair market value of the Common Stock on the date of grant (as determined in good faith by the Board). Unless otherwise determined by the Board, the Option will vest as follows:

(i) Vesting Schedule. One-fourth (1/4th) of the Option shall vest and become exercisable on the twelve (12)-month anniversary of the Effective Date, and one thirty-sixth (1/36th) of the remaining number of shares shall vest each month thereafter, such that one hundred percent (100%) of the shares subject to the Option shall be vested and exercisable as of the four (4) year anniversary of the Effective Date. Subject to the provisions of Section 3.2(ii) below, continued vesting of the Option will stop on the date Executive's employment or consulting relationship with the Company is terminated.

(ii) Double Trigger Acceleration. In the event of a Change of Control (as defined below), if: (1) Executive is terminated without Cause by the Company or the successor corporation or a parent or subsidiary of such successor corporation of the Company (the "Successor Corporation") within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the Change of Control transaction; or (2) Executive terminates his employment or consulting relationship with the Company or the Successor Corporation, each as applicable, for Good Reason within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the transaction, then the Option or any cancelled, assumed, or substituted Option held by Executive in lieu of the Option at the time of Executive's termination shall become fully accelerated and fully vested immediately prior to the effective date of termination. As used herein, "Change of Control" shall mean a sale of all or substantially all of the Company's assets, or any stock sale, merger, or consolidation of the Company with or into another corporation or business entity

other than a stock sale, merger, or consolidation in which the holders of more than fifty percent (50%) of the shares of capital stock of the Company outstanding immediately prior to such transaction continue to hold (either by the voting securities remaining outstanding or by their being converted into voting securities of the surviving entity) more than fifty percent (50%) of the total voting power represented by the voting securities of the Company, or such surviving entity, outstanding immediately after such transaction; provided, however, that a bona fide equity financing by the Company will not be deemed to be a Change of Control.

3.3 **Bonus Eligibility**. Each of the Company and Executive acknowledge and agree that the Company is in the process of negotiating a potential transaction known as "Project Nautilus" (the "Nautilus Transaction"). In recognition of Executive's efforts and contributions to the Nautilus Transaction, and subject to the consummation and final closing of the Nautilus Transaction, the Company will pay to Executive a one (1)-time cash bonus in the amount of U.S. Fifty Thousand Dollars (U.S. $50,000) upon the final closing of the Nautilus Transaction, as determined in good faith by the Board; provided however, that Executive must be employed by the Company on such date in order to remain eligible for such bonus payment. Such bonus payment, if earned, will be paid by the Company to Executive within fifteen (15) days following the date upon which the Board has confirmed the closing of the Nautilus Transaction.

3.4 **Subsequent Grants**. Subject to the discretion of the Board of Directors, Executive shall be eligible to receive future grants of stock options or purchase rights from time to time in the future, on such terms and subject to such conditions as the Board shall determine as of the date of any such grant.

3.5 **Benefit Plan Eligibility**. Executive shall be entitled to: (i) participate in the Company's healthcare coverage plan and 401(k) or similar retirement plan; and (ii) receive paid vacation and sick leave, with levels to be determined by the Company's Board (or, if established, the Compensation Committee of the Board), all upon the same terms as such benefits are made available to other senior executives of the Company.

3.6 **Reimbursement of Expenses**. Executive shall be entitled to payment or reimbursement of all reasonable, ordinary, and necessary business expenses incurred by Executive in the performance of his responsibilities and the promotion of the Company's business, provided that those expenses are consistent with the Company policy and limits. Executive shall submit to the Company periodic statements of all expenses so incurred. Subject to such reviews as the Company may deem necessary, the Company shall reimburse Executive the full amount of any such expenses advanced by him in the ordinary course of business.

ARTICLE 4 EFFECT OF TERMINATION ON COMPENSATION

4.1 **In General**. Upon a termination of Executive's employment for any reason, the Executive (or the Executive's estate) shall be entitled to receive the sum of Executive's Base Salary through the date of termination not theretofore paid; any unpaid expense reimbursements owed to the Executive under paragraph 3.6; and any amount arising from Executive's participation in, or benefits under, any employee benefit plans, programs or arrangements under paragraph 3.5

(including without limitation, any disability or life insurance benefit plans, programs or arrangements), which amounts shall be payable in accordance with the terms and conditions of such employee benefit plans, programs or arrangements. Except as otherwise provided in this Article 4, all of Executive's rights to salary, fringe benefits and other compensation hereunder shall cease upon such date of termination, other than those expressly required under applicable law.

4.2 **Termination by the Company**. If Executive's employment hereunder shall be terminated by the Company at any time for reasons other than those provided in Sections 2.2(i), (ii), or (iii), then the Company shall: (a) provide Executive with a cash payment equal to one-fourth (1/4th) of Executive's Base Salary at the rate in effect under paragraph 3.1 on the date of such termination, (b) provide for the participation of Executive and/or his dependents, as applicable, in the Company's medical and dental benefits in which they are enrolled at the time of such termination for a period of three (3) months following the termination date of Executive's employment, at the Company's expense, to the extent that such continuation is permitted at the time of such termination under the terms of such Company benefit plans and insurance arrangements, and if such continuation is not permitted then the Company shall reimburse Executive for the cost of Executive procuring the same or substantially similar benefits himself, unless Executive is otherwise eligible to receive benefit coverage of a roughly equivalent nature by virtue of his employment with any subsequent employer; and (c) accelerate the vesting of Executive's Option by a period of twelve (12) months, provided Executive agrees to remain reasonably available to consult with the Company, on an as needed as requested basis, for a period of twelve (12) months, on any issues reasonably requested by the Company.

4.3 **Termination by Executive**. If Executive's employment hereunder shall be terminated by Executive for Good Reason, then the Company shall: (a) provide Executive with a cash payment equal to one-fourth (1/4th) of Executive's Base Salary at the rate in effect under paragraph 3.1 on the date of such termination, (b) provide for the participation of Executive and/or his dependents, as applicable, in the Company's medical and dental benefits in which they are enrolled at the time of such termination for a period of three (3) months following the termination date of Executive's employment, at the Company's expense, to the extent that such continuation is permitted at the time of such termination under the terms of such Company benefit plans and insurance arrangements, and if such continuation is not permitted then the Company shall reimburse Executive for the cost of Executive procuring the same or substantially similar benefits himself, unless Executive is otherwise eligible to receive benefit coverage of a roughly equivalent nature by virtue of his employment with any subsequent employer; and (c) accelerate the vesting of Executive's Option by a period of twelve (12) months, provided Executive agrees to remain reasonably available to consult with the Company, on an as needed as requested basis, for a period of twelve (12) months, on any issues reasonably requested by the Company.

4.4 **Release and Full Settlement**. Anything to the contrary herein notwithstanding, as a condition to the receipt of the additional termination payments and benefits under paragraph 4.2 or 4.3 hereof, as applicable, Executive shall first execute a release, in the form established by the Board, releasing the Board, the Company, and the Company's parent corporation, subsidiaries, affiliates, and their respective shareholders, owners, partners, officers, directors, employees,

attorneys and agents from any and all claims and from any and all causes of action of any kind or character including, but not limited to, all claims or causes of action arising out of Executive's employment with the Company or its affiliates or the termination of such employment, but excluding all claims to vested benefits and payments Executive may have under any compensation or benefit plan, program or arrangement, including this Agreement. Executive shall provide such release no later than thirty (30) days after the date of his termination of employment with the Company and, as a condition to the Company's obligation to provide the additional termination payments and benefits in accordance with paragraphs 4.2 and 4.3, Executive shall not revoke such release. The performance of the Company's obligations hereunder and the receipt of any termination payments and benefits provided under paragraphs 4.2 and 4.3 shall constitute full settlement of all such claims and causes of action, subject to the limitations set forth above.

4.5 **Liquidated Damages**. In light of the difficulties in estimating the damages for an early termination of Executive's employment under this Agreement, the Company and Executive hereby agree that the payments and benefits, if any, to be received by Executive pursuant to this Article 4 shall be received by Executive as liquidated damages.

4.6 **Section 409A Matters**. Notwithstanding any provision in this Agreement to the contrary, if Executive is a specified employee (within the meaning of Section 409A(a)(2)(B)(i) of the Internal Revenue Code of 1986, as amended (the "Code"), and applicable administrative guidance thereunder and determined in accordance with any method selected by the Company that is permitted under the regulations issued under Section 409A of the Code), and the payment of any amount or benefit under this Agreement to or on behalf of Executive would be subject to additional taxes and interest under Section 409A of the Code because the timing of such payment is not delayed as provided in Section 409A(a)(2)(B)(i) of the Code and the regulations thereunder, then any such payment or benefit that Executive would otherwise be entitled to during the first six (6) months following the date of Executive's separation from service (within the meaning of Section 409A(a)(2)(A)(i) of the Code and applicable administrative guidance thereunder) shall be accumulated and paid or provided, as applicable, on the date that is six (6) months after Executive's separation from service (or if such date does not fall on a business day of the Company, the next following business day of the Company), or such earlier date upon which such amount can be paid or provided under Section 409A of the Code without being subject to such additional taxes and interest; provided, however, that Executive shall be entitled to receive the maximum amount permissible under Section 409A of the Code and the applicable administrative guidance thereunder during the six-month period following his separation from service that will not result in the imposition of any additional tax or penalties on such amount. For all purposes of this Agreement, Executive shall be considered to have terminated employment with the Company when Executive incurs a "separation from service" with the Company within the meaning of Section 409A(a)(2)(A)(i) of the Code and the applicable administrative guidance issued thereunder. To the extent that any reimbursements pursuant to this Agreement are taxable to the Executive, any reimbursement payment due to the Executive pursuant to such provision shall be paid to the Executive on or before the last day of the Executive's taxable year following the taxable year in which the related expense was incurred. The Executive agrees to provide prompt notice to the Company of any such expenses (and any other documentation that the Company may reasonably

require to substantiate such expenses) in order to facilitate the Company's timely reimbursement of the same. The reimbursements and benefits pursuant to this Agreement are not subject to liquidation or exchange for another benefit and the amount of such reimbursements and benefits that the Executive receives in one taxable year shall not affect the amount of such reimbursements or benefits that the Executive receives in any other taxable year. To the extent that Section 409A of the Code is applicable to this Agreement, the provisions of this Agreement shall be interpreted as necessary to comply with such section and the applicable administrative guidance issued thereunder.

4.7 **Other Benefits**. This Agreement governs the rights and obligations of Executive and the Company with respect to Executive's Base Salary, initial stock option grant, benefits, and certain perquisites of employment. Except as expressly provided herein, Executive's rights and obligations both during the term of his employment and thereafter with respect to his direct and indirect ownership rights in the Company, and other benefits under the plans and programs maintained by the Company, shall be governed by the separate agreements, plans and the other documents and instruments governing such matters.

ARTICLE 5 PROTECTION OF CONFIDENTIAL INFORMATION

5.1 **PIIA**. Executive acknowledges and agrees that all compensation paid to Executive by the Company pursuant to this Agreement is conditioned upon Executive signing a Proprietary Information and Inventions Agreement in the form attached hereto as Exhibit A, which is incorporated herein by this reference. Executive hereby covenants to abide by the terms and conditions of the PIIA, including, but not limited to, the assignment of inventions and confidentiality provisions of the PIIA.

5.2 **Remedies**. Executive acknowledges that money damages would not be sufficient remedy for any breach of this Article 5 by Executive, and the Company or its affiliates shall be entitled to enforce the provisions of this Article 5 by terminating payments then owing to Executive under this Agreement or otherwise and to specific performance and injunctive relief as remedies for such breach. Such remedies shall not be deemed the exclusive remedies for a breach of this Article 5 but shall be in addition to all remedies available at law or in equity, including the recovery of damages from Executive and his agents.

ARTICLE 6 NON-COMPETITION AND NON-SOLICITATION OBLIGATIONS

6.1 **Non-Competition and Non-Solicitation Obligations**. As part of the consideration for the compensation and benefits to be paid to Executive hereunder; to protect the trade secrets and confidential information of the Company that have been or will in the future be disclosed or entrusted to Executive, the business good will of the Company and its affiliates that has been and will in the future be developed in Executive, or the business opportunities that have been and will in the future be disclosed or entrusted to Executive by the Company and its affiliates; the Company and Executive agree to the following provisions:

(i) Executive hereby agrees that during the term of his direct or indirect employment or consulting relationship with the Company (as the case may be), and for a

period of twelve (12) months following the termination of his employment or consulting relationship with the Company (as the case may be) for any reason, Executive shall not directly or indirectly solicit, induce, recruit, hire or encourage any of the Company's employees or consultants to terminate their relationship with the Company, or attempt any of the foregoing, either for himself or any other person or entity. For a period of twelve (12) months following termination of Executive's employment or consulting relationship with the Company (as the case may be) for any reason, Executive hereby covenants not to solicit any licensor to or customer of the Company or licensee of the Company's products, that are known to him with respect to any business, products or services that are competitive to the products or services offered by the Company or under development as of the date of termination of his relationship with the Company. In the event that Executive's employment with the Company is terminated by the Company without Cause or if Executive resigns for Good Reason, then the twelve (12) month periods referenced above in this section shall each be reduced to six (6) months.

(ii) Executive hereby agrees that during the term of his direct or indirect employment or consulting relationship with the Company (as the case may be) and for twelve (12) months following the termination of his employment or consulting relationship with the Company (as the case may be) for any reason, he will not, without the Company's prior written consent, directly or indirectly work on any products or services that are competitive with products or services (a) being commercially developed or exploited by the Company during his employment or consultancy with the Company (as the case may be) and (b) on which he worked or about which he learned Proprietary Information (as defined in the PIIA) during his employment or consultancy with the Company (as the case may be). In the event that Executive's employment with the Company is terminated by the Company without Cause or if Executive resigns for Good Reason, then the twelve (12) month period referenced above in this section shall be reduced to six (6) months.

6.2 **Enforcement and Remedies**. Executive acknowledges that money damages would not be sufficient remedy for any breach of this Article 6 by Executive, and the Company shall be entitled to enforce the provisions of this Article 6 by terminating any payments then owing to Executive under this Agreement and/or to specific performance and injunctive relief as remedies for such breach. Such remedies shall not be deemed the exclusive remedies for a breach of this Article 6, but shall be in addition to all remedies available at law or in equity to the Company, including, without limitation, the recovery of damages from Executive and Executive's agents involved in such breach and remedies available to the Company pursuant to other agreements with Executive.

6.3 **Reformation**. It is expressly understood and agreed that the Company and Executive consider the restrictions contained in this Article 6 to be reasonable and necessary to protect the proprietary information of the Company and its affiliates. Nevertheless, if any of the aforesaid restrictions are found by a court having jurisdiction to be unreasonable, or overly broad as to geographic area or time, or otherwise unenforceable, the parties intend for the restrictions therein set forth to be modified by such courts so as to be reasonable and enforceable and, as so modified by the court, to be fully enforced.

ARTICLE 7 NONDISPARAGEMENT

Executive agrees not to disparage the Company, any of its products or practices, or any of its directors, officers, employees, agents, representatives, stockholders or affiliates, either orally or in writing, at any time and the Company and its Affiliates shall not and shall instruct members of the Board and executive officers of the Company not to disparage the Executive, either orally or in writing, at any time; *provided*, that, either party may confer in confidence with its legal representatives and make truthful statements as required by law or as required by any applicable rules of professional conduct.

ARTICLE 8 MISCELLANEOUS

8.1 Notices. For purposes of this Agreement, notices and all other communications provided for herein shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by United States registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

To the Company:	Alpine Immune Sciences, Inc. 201 Elliott Ave. W., Ste. 230 Seattle, WA 98119
With copy to:	Van Katzman Ascent Law Partners, LLP 719 Second Ave, Ste. 1150 Seattle, WA 98104
To Executive:	Paul Rickey 201 Elliott Ave. W., Ste 230 Seattle, WA 98119

or to such other address as either party may furnish to the other in writing in accordance herewith, except that notices or changes of address shall be effective only upon receipt.

8.2 Applicable Law. This Agreement is entered into under, and shall be governed for all purposes by the laws of the State of Washington.

8.3 No Waiver. No failure by either party hereto at any time to give notice of any breach by the other party of, or to require compliance with, any condition or provision of this Agreement shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time.

8.4 Severability. If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of that provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effect.

8.5 **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same agreement.

8.6 **Withholding of Taxes and Other Employee Deductions**. The Company may withhold from any benefits and payments made pursuant to this Agreement or otherwise all federal, state, city and other taxes as may be required pursuant to any law or governmental regulation or ruling and all other normal employee deductions made with respect to the Company's employees generally.

8.7 **Headings**. The paragraph headings have been inserted for purposes of convenience and shall not be used for interpretive purposes.

8.8 **Affiliate**. As used in this Agreement, the term "affiliate" shall mean any entity which owns or controls, is owned or controlled by, or is under common ownership or control with, the Company.

8.9 **Assignment**. This Agreement shall be binding upon and inure to the benefit of the Company and any successor of the Company, by merger or otherwise. This Agreement shall also be binding and inure to the benefit of Executive and his heirs. Except as provided in the preceding sentence, this Agreement, and the rights and obligations of the parties hereunder, are personal and neither this Agreement, nor any right, benefit, or obligation of either party hereto, shall be subject to voluntary or involuntary assignment, alienation or transfer, whether by operation of law or otherwise, without the prior written consent of the other party.

8.10 **Term**. This Agreement has a term co-extensive with the term of employment provided in Article 2. Termination shall not affect any right or obligation of any party which is accrued or vested prior to such termination. The provisions of paragraphs 2.5, 4.4 to 4.7 and Articles 5, 6, 7 and 8 shall survive any termination of this Agreement.

8.11 **Entire Agreement**. This Agreement, together with the PIIA, the Amended and Restated 2015 Stock Plan and the Stock Option Agreement, will constitute the entire agreement of the parties with regard to the subject matter hereof, and will contain all the covenants, promises, representations, warranties and agreements between the parties with respect to employment of Executive by the Company. Without limiting the scope of the preceding sentence, all understandings and agreements preceding the date of execution of this Agreement and relating to the subject matter hereof are as of the Effective Date superseded by this Agreement and null and void and of no further force and effect. Any modification of this Agreement will be effective only if it is in writing and signed by the party to be charged.

8.12 **Liability Insurance**. The Company may maintain a directors' and officers' insurance liability policy throughout the term of this Agreement and may provide Executive with coverage under such policy consistent with those provided to other the Company directors and officers.

8.13 Arbitration.

(i) The Company and Executive agree to submit to final and binding arbitration any and all disputes or disagreements concerning the interpretation or application of this Agreement, the termination of this Agreement, or any other aspect of the Executive's employment relationship with Company. Any such dispute or disagreement will be resolved by arbitration in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association before a single arbitrator. Arbitration will take place in Seattle, Washington, unless the parties mutually agree to a different location. Company and Executive agree that the decision of the arbitrator will be final and binding on both parties. Any court having jurisdiction may enter a judgment upon the award rendered by the arbitrator. The costs of the proceedings shall be borne equally by the parties unless the arbitrator orders otherwise.

(ii) Notwithstanding the provisions of paragraph 8.13(i), Company may, if it so chooses, bring an action in any court of competent jurisdiction for temporary or preliminary injunctive relief to enforce Executive's obligations under Articles 5 (including the PIIA), 6 or 7 hereof, pending a decision by the arbitrator in accordance with paragraph 8.13(i).

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement to be effective as of the Effective Date.

EXECUTIVE:

PAUL RICKEY,
an individual

By: /s/ Paul Rickey
Name: Paul Rickey

COMPANY:

ALPINE IMMUNE SCIENCES, INC.,
a Delaware corporation

By: /s/ Dr. Mitchell H. Gold
Name: Dr. Mitchell H. Gold
Its: Chief Executive Officer

EXHIBIT A

PIIA

ALPINE IMMUNE SCIENCES, INC.

PROPRIETARY INFORMATION AND INVENTIONS AGREEMENT

In exchange for my becoming employed (or my employment being continued), or retained as a consultant, officer or director (or such relationship being continued), as the case may be, by Alpine Immune Sciences, Inc., a Delaware corporation, or its subsidiaries, affiliates, predecessors, or successors (collectively, the "Company"), and for any cash and/or equity compensation for my services, I hereby agree as follows:

1. **Duties**. I will perform for the Company such duties as may be designated by the Company from time to time. During my period of employment or consulting relationship with the Company (as the case may be), I will devote my best efforts to the interests of the Company and will not engage in other employment or in any activities detrimental to the best interests of the Company without the prior written consent of the Company.

2. **Confidentiality Obligation**. I understand and agree that all Proprietary Information (as defined below) shall be the sole property of the Company and its assigns, including all trade secrets, patents, copyrights and other rights in connection therewith. I hereby assign to the Company any rights I may acquire in such Proprietary Information. I will hold in confidence and not directly or indirectly use or disclose, both during my employment by, or consulting relationship with, the Company (as the case may be) and after its termination (regardless of the reason for such termination), any Proprietary Information I obtain or create during the period of my employment or consulting relationship, whether or not during working hours, except to the extent authorized by the Company, until such Proprietary Information becomes generally known. I agree not to make copies of such Proprietary Information except as authorized by the Company. Upon termination of my employment or consulting relationship (as the case may be) or upon an earlier request of the Company, I will return or deliver to the Company all tangible forms of such Proprietary Information in my possession or control, including but not limited to drawings, specifications, documents, records, devices, models or any other material and copies or reproductions thereof.

3. **Ownership of Physical Property**. All documents, apparatus, equipment and other physical property in any form, whether or not pertaining to Proprietary Information, furnished to me by the Company or produced by me or others in connection with my employment or consulting relationship (as the case may be) shall be and remain the sole property of the Company. I shall return to the Company all such documents, materials and property as and when requested by the Company, except only (a) my personal copies of records relating to my compensation, (b) if applicable, my personal copies of any materials evidencing shares of the Company's capital stock purchased by me and/or options to purchase shares of the Company's capital stock granted to me, (c) my copy of this Agreement and (d) my personal property and personal documents I brought with me to the Company and any personal correspondence and personal materials that I accumulated and kept at my office during my employment or consulting relationship (as the case may be) (my "Personal Documents"). Even if the Company does not so request, I shall return all such documents, materials and property upon termination of my employment or consulting relationship (as the case may be), and, except for

my Personal Documents, I will not take with me any such documents, material or property or any reproduction thereof upon such termination.

4. **Assignment of Inventions**.

(a) Without further compensation, I hereby agree promptly to disclose to the Company, all Inventions (as defined below) which I may solely or jointly develop or reduce to practice during or prior to the period of my employment or consulting relationship with the Company (as the case may be) which (a) pertain to any line of business activity of the Company, (b) are aided by the use of time, material or facilities of the Company, whether or not during working hours or (c) relate to any of my work during the period of my employment or consulting relationship with the Company (as the case may be), whether or not during normal working hours ("Company Inventions"). During the term of my employment or consulting relationship (as the case may be), all Company Inventions that I conceive, reduce to practice, develop or have developed (in whole or in part, either alone or jointly with others) shall be the sole property of the Company and its assigns to the maximum extent permitted by law (and to the fullest extent permitted by law shall be deemed "works made for hire"), and the Company and its assigns shall be the sole owner of all patents, copyrights, trademarks, trade secrets and other rights in connection therewith. I hereby assign to the Company any rights that I may have or acquire in such Company Inventions.

(b) I attach hereto as Exhibit A a complete list of all Inventions, if any, made by me prior to my employment or consulting relationship with the Company that are relevant to the Company's business, and I represent and warrant that such list is complete. If no such list is attached to this Agreement, I represent that I have no such Inventions at the time of signing this Agreement. If in the course of my employment or consulting relationship with the Company (as the case may be), I use or incorporate into a product or process an Invention not covered by Section 4(a) of this Agreement in which I have an interest, the Company is hereby granted a nonexclusive, fully paid-up, royalty-free, perpetual, worldwide license of my interest to use and sublicense such Invention without restriction of any kind.

NOTICE REQUIRED BY REVISED CODE OF WASHINGTON 49.44.140:

Any assignment of Inventions required by this Agreement does not apply to an Invention for which no equipment, supplies, facility, or trade secret information of the Company was used and which was developed entirely on the employee's own time, unless (a) the Invention relates (i) directly to the business of the Company or (ii) to the Company's actual or demonstrably anticipated research or development, or (b) the Invention results from any work performed by the employee for the Company.

5. **Further Assistance; Power of Attorney**. I agree to perform, during and after my employment or consulting relationship with the Company (as the case may be), all acts deemed necessary or desirable by the Company to permit and assist it, at its expense, in obtaining and enforcing the full benefits, enjoyment, rights and title throughout the world in the Inventions assigned to the Company as set forth in Section 4 above. Such acts may include, but are not limited to, execution of documents and assistance or cooperation in legal proceedings. I hereby irrevocably

designate the Company and its duly authorized officers and agents as my agent and attorney-in fact, to execute and file on my behalf any such applications and to do all other lawful acts to further the prosecution and issuance of patents, copyright and mask work registrations related to such Inventions. This power of attorney shall not be affected by my subsequent incapacity.

6. **Inventions**. As used in this Agreement, the term "Inventions" means discoveries, developments, concepts, designs, ideas, know-how, improvements, inventions, trade secrets and/or original works of authorship, whether or not patentable, copyrightable or otherwise legally protectable. This includes, but is not limited to, any new product, machine, article of manufacture, biological material, method, procedure, process, technique, use, equipment, device, apparatus, system, compound, formulation, composition of matter, design or configuration of any kind, or any improvement thereon.

7. **Proprietary Information**. As used in this Agreement, the term "Proprietary Information" means information or physical material not generally known or available outside the Company or information or physical material entrusted to the Company by third parties. This includes, but is not limited to, Inventions, confidential knowledge, copyrights, product ideas, techniques, processes, formulas, object codes, biological materials, mask works and/or any other information of any type relating to documentation, laboratory notebooks, data, schematics, algorithms, flow charts, mechanisms, research, manufacture, improvements, assembly, installation, marketing, forecasts, sales, pricing, customers, customer lists, customer data, including but not limited to customers' personally identifiable information, the salaries, duties, qualifications, performance levels and terms of compensation of other employees, and/or cost or other financial data concerning any of the foregoing or the Company and its operations. Proprietary Information may be contained in material such as drawings, samples, procedures, specifications, reports, studies, customer or supplier lists, budgets, cost or price lists, compilations or computer programs, or may be in the nature of unwritten knowledge or know-how.

8. **No Conflicts**. I represent that my performance of all the terms of this Agreement as an employee of or consultant to the Company (as the case may be) does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my becoming an employee or consultant of the Company (as the case may be), and I will not disclose to the Company, or induce the Company to use, any confidential or proprietary information or material belonging to any previous employer or others. I agree not to enter into any written or oral agreement that conflicts with the provisions of this Agreement.

9. **No Interference**. I certify that I am not a party to any other agreement which will interfere with my full compliance with this Agreement.

10. **Effects of Agreement**. This Agreement (a) shall survive for a period of five (5) years beyond the termination of my employment by or consulting relationship with the Company (as the case may be), (b) inures to the benefit of successors and assigns of the Company and (c) is binding upon my heirs and legal representatives.

11. **At-Will Relationship**. I understand and acknowledge that my employment or consulting relationship with the Company (as the case may be) is and shall continue to be at-will, as defined under applicable law, meaning that either I or the Company may terminate the relationship at any time for any reason or no reason, without further obligation or liability.

12. **Injunctive Relief**. I acknowledge that violation of this Agreement by me may cause irreparable injury to the Company, and I agree that the Company will be entitled to seek extraordinary relief in court, including, but not limited to, temporary restraining orders, preliminary injunctions and permanent injunctions without the necessity of posting a bond or other security and without prejudice to any other rights and remedies that the Company may have for a breach of this Agreement.

13. **Miscellaneous**. This Agreement, the Employment Agreement between the parties to which this Agreement is referred, if any, the Offer Letter between the parties to which this Agreement is referred, if any, the Independent Contractor Agreement to which this Agreement is referred, if any, the Intellectual Property Assignment Agreement between the parties, if any, and the exhibits to this Agreement constitute the entire understanding and agreement of the parties to this Agreement concerning the subject matter of this Agreement and supersede any oral, written or other communications or agreements concerning the subject matter of this Agreement. This Agreement may be amended or waived only by a written instrument signed by me and the President of the Company. This Agreement shall be governed by the laws of the State of Washington applicable to contracts entered into and performed entirely within the State of Washington, without giving effect to principles of conflict of laws. If any provision of this Agreement is held to be unenforceable under applicable law, then such provision shall be excluded from this Agreement only to the extent unenforceable, and the remainder of such provision and of this Agreement shall be enforceable in accordance with its terms.

14. **Acknowledgment**. I certify and acknowledge that I have carefully read all of the provisions of this Agreement and that I understand and will fully and faithfully comply with such provisions.

[Signature Page to Follow]

ALPINE IMMUNE SCIENCES, INC.,
a Delaware corporation an individual

By: /s/ Dr. Mitchell H. Gold
Name: Dr. Mitchell H. Gold
Its: Chief Executive Officer

Dated as of: April 1, 2017

PAUL RICKEY,
an individual

By: /s/ Paul Rickey
Name: Paul Rickey

Dated as of: April 1, 2017

Exhibit A

Alpine Immune Sciences, Inc.
201 Elliott Ave. W., Ste. 230
Seattle, WA 98119

Ladies and Gentlemen:

1. The following is a complete list of all Inventions relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me, alone or jointly with others or which has become known to me prior to my employment by the Company. I represent that such list is complete.

None.

2. I propose to bring to my employment or consultancy the following materials and documents of a former employer:

_____ No materials or documents.
_____ See below:

/s/ Paul Rickey
Paul Rickey, an individual

Exhibit A-1

Exhibit 10.35

ALPINE IMMUNE SCIENCES, INC.
AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (the "**Agreement**") is entered into as of January 1, 2018 (the "**Effective Date**") between Alpine Immune Sciences, Inc. (the "**Company**"), and Paul Rickey ("**Executive**") (collectively referred to as the "**Parties**" or individually as a "**Party**").

R E C I T A L S

WHEREAS, the Company desires to continue to employ Executive as its Senior Vice President and Chief Financial Officer, and to enter into an agreement embodying the terms of such continued at-will employment;

WHEREAS, Executive desires to accept such continued employment and enter into such an agreement.

A G R E E M E N T

NOW, THEREFORE, in consideration of the premises and mutual covenants herein and for other good and valuable consideration, the Parties agree as follows:

1. Duties and Scope of Employment.

(a) Positions and Duties. As of the Effective Date, Executive will continue to serve as Senior Vice President and Chief Financial Officer of the Company, subject to the terms and conditions of this Agreement. Executive will continue to render such business and professional services in the performance of his duties, consistent with Executive's position within the Company, as shall continue to be reasonably be assigned to him by the Company and, as such, from and after the date hereof, shall report directly to and shall be subject to the direction of the Chief Executive Officer. The period of Executive's continued at-will employment under the terms of this Agreement is referred to herein as the "Employment Term."

(b) Obligations. During the Employment Term, Executive will continue to perform his duties faithfully and to the best of his ability and will continue to devote his full business efforts and time to the Company. For the duration of the Employment Term, and as before, Executive agrees not to actively engage in any other employment, occupation or consulting activity for any direct or indirect remuneration without the prior written approval of the Board.

2. At-Will Employment. Subject to Sections 6 below, the parties agree that Executive's employment with the Company will continue to be "at-will" employment and, as such, may be terminated at any time with or without cause or notice, for any reason or no reason. Executive further understands and agrees that, as before, neither his job performance nor promotions, commendations, bonuses or the like from the Company give rise to or in any way serve as the basis for modification, amendment, or extension, by implication or otherwise, of his employment with the Company.

3. Compensation.

(a) Base Salary. During the Employment Term, the Company will pay Executive as compensation for his services a base salary at a rate of $335,000 per year, as modified from time to time

at the discretion of the Board or a duly constituted committee of the Board (the "**Base Salary**"). The Base Salary, as before, will be paid in regular installments in accordance with the Company's normal payroll practices (subject to required withholding). Any modification in Base Salary (together with the then existing Base Salary) shall serve as the "Base Salary" for future employment under this Agreement. The first and last payment will be adjusted, if necessary, to reflect a commencement or termination date other than the first or last working day of a pay period.

(b) Annual Bonus. During the Employment Term, for each calendar year, Executive shall be eligible to earn an annual discretionary bonus based upon the achievement of certain Company and individual goals as determined by the Company in its discretion after consultation with Executive (the "**Annual Bonus**"). The Board will determine in its discretion whether the performance objectives for any Annual Bonus have been achieved. In connection with the Annual Bonus, subject to the corresponding performance levels being achieved, the Executive shall be eligible for an annual target bonus of up to 35% of the Executive's Base Salary (the "**Target Bonus**") with an annual maximum bonus equal to 100% of the Target Bonus. The Board does, however, retain the option of increasing the Annual Bonus in any given year by an additional discretionary amount in the event Executive significantly exceeds the above-referenced performance objectives for that year, as determined, in all cases, by the Board in its sole discretion. Any such Annual Bonus (including any additional discretionary increase, if awarded by the Board) will be determined and, to the extent earned, paid on an annual basis, at the time and manner in which such bonuses are normally paid to employees at Executive's level, but in no event will such payment be made later than March 15 of the year following the year such Annual Bonus was earned. Receipt of any Annual Bonus is contingent upon Executive's continued employment with the Company through the date the Annual Bonus is earned and any Annual Bonus for a calendar year will not be considered earned if Executive is terminated prior to December 1. No "pro-rated" or partial bonus will be provided in the event of Executive's earlier separation from employment, except as provided by this Agreement.

(c) Equity. The Executive acknowledges and agrees that Executive has been previously awarded the options to purchase shares of the Company's common stock detailed in Schedule 1 hereto, subject to the terms, definitions and conditions, including vesting requirements, of the relevant stock option agreements between Executive and the Company (the "**Option Agreements**") and the Company's Amended and Restated 2015 Stock Plan and 2015 Equity Incentive Plan, as applicable (the "**Equity Plan**").

4. Employee Benefits. During the Employment Term, Executive will be continue to be eligible to participate in the employee benefit plans currently and hereafter maintained by the Company of general applicability to similarly-situated senior executives of the Company, subject to the terms and conditions of the applicable policies. The Company, as before, reserves the right to cancel or change the benefit plans and programs it offers to its employees at any time.

5. Business Expenses. During the Employment Term, the Company will reimburse Executive for reasonable business travel, entertainment or other business expenses incurred by Executive in the furtherance of or in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policy as in effect from time to time. Except as expressly provided otherwise herein, no reimbursement payable to the Executive pursuant to any provision of this Agreement or pursuant to any plan or arrangement of the Company shall be paid later than the last day of the calendar year following the calendar year in which the related expense was incurred, and no such reimbursement during any calendar year shall affect the amounts eligible for reimbursement in any other calendar year, except, in each case, to the extent that the right to reimbursement does not provide for a "deferral of compensation" within the meaning of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**"), and the final regulations and any formal guidance issued thereunder ("**Section 409A**").

6. Termination and Severance. As discussed above, the Company shall be entitled to terminate Executive at any time and for any reason, and Executive shall be entitled to resign at any time and for any reason. Executive may, however, be entitled to receive certain severance benefits in connection with his separation from employment under the Company's Change of Control and Severance Policy (the "**Severance Policy**"). Any such severance, if applicable, will be subject to the terms and conditions of the Severance Policy, as may be amended or modified from time to time.

7. Company Matters.

(a) Proprietary Information and Inventions. Executive acknowledges and agrees that, as a condition of his continued employment, he is required to sign and abide by the terms of the At-Will Employment, Confidential Information, Invention Assignment, and Arbitration Agreement (the "**Confidentiality Agreement**"), including the arbitration agreement and provisions governing the nondisclosure of confidential information and restrictive covenants contained therein. A copy of the Confidentiality Agreement is attached hereto as Exhibit A.

(b) Ventures. If, during his employment and as before, Executive is engaged in or associated with planning or implementing of any project, program or venture involving the Company and any third parties, all rights in such project, program or venture shall belong to the Company (or third party, to the extent provided in any agreement between the Company and the third party). Except as approved by the Board in writing, Executive shall not be entitled to any interest in such project, program or venture or to any commission, finder's fee or other compensation in connection therewith other than the salary or other compensation to be paid to Executive as provided in this Agreement.

(c) Notification of New Employer. In the event that Executive leaves the employ of the Company, Executive grants consent to notification by the Company to Executive's new employer about his rights and obligations under this Agreement and the Confidentiality Agreement.

8. ARBITRATION. IN CONSIDERATION OF EXECUTIVE'S EMPLOYMENT WITH THE COMPANY, ITS PROMISE TO ARBITRATE ALL EMPLOYMENT-RELATED DISPUTES AND EXECUTIVE'S RECEIPT OF THE COMPENSATION, PAY RAISES AND OTHER BENEFITS PAID TO EXECUTIVE BY THE COMPANY, AT PRESENT AND IN THE FUTURE, EXECUTIVE AGREES THAT ANY AND ALL CONTROVERSIES, CLAIMS, OR DISPUTES WITH ANYONE (INCLUDING THE COMPANY AND ANY EMPLOYEE, OFFICER, DIRECTOR, SHAREHOLDER OR BENEFIT PLAN OF THE COMPANY, IN THEIR CAPACITY AS SUCH OR OTHERWISE), ARISING OUT OF, RELATING TO, OR RESULTING FROM EXECUTIVE'S EMPLOYMENT WITH THE COMPANY OR THE TERMINATION OF EXECUTIVE'S EMPLOYMENT WITH THE COMPANY, INCLUDING ANY BREACH OF THIS AGREEMENT, SHALL BE SUBJECT TO BINDING ARBITRATION, AS SET FORTH IN THE CONFIDENTIALITY AGREEMENT.

9. Assignment. This Agreement will be binding upon and inure to the benefit of (a) the heirs, executors and legal representatives of Executive upon Executive's death and (b) any successor of the Company. Any such successor of the Company will be deemed substituted for the Company under the terms of this Agreement for all purposes. For this purpose, "successor" means any person, firm, corporation or other business entity which at any time, whether by purchase, merger or otherwise, directly or indirectly acquires all or substantially all of the assets or business of the Company. None of the rights of Executive to receive any form of compensation payable pursuant to this Agreement may be assigned or transferred except by will or the laws of descent and distribution. Any other attempted assignment, transfer, conveyance or other disposition of Executive's right to compensation or other benefits will be null and void.

10. Notices. All notices, requests, demands and other communications called for under this Agreement shall be in writing and shall be delivered personally by hand or by courier, mailed by United States first-class mail, postage prepaid, or sent by facsimile directed to the Party to be notified at the address or facsimile number indicated for such Party on the signature page to this Agreement, or at such other address or facsimile number as such Party may designate by ten (10) days' advance written notice to the other Parties hereto. All such notices and other communications shall be deemed given upon personal delivery, three (3) days after the date of mailing, or upon confirmation of facsimile transfer.

11. Severability. In the event that any provision hereof becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement will continue in full force and effect without said provision.

12. Integration. This Agreement, together with the Severance Policy, the Equity Plans, the Option Agreements and the Confidentiality Agreement, represents the entire agreement and understanding between the parties as to the subject matter herein and supersedes all prior or contemporaneous agreements whether written or oral, including the Employment Agreement, dated April 1, 2017 by and between the Company and Executive (the "**Prior Employment Agreement**"). The Executive and Company acknowledge and agree that the Prior Employment Agreement shall be of no further force and effect. No waiver, alteration, or modification of any of the provisions of this Agreement will be binding unless in writing and signed by duly authorized representatives of the parties hereto.

13. Tax Withholding. All payments, as before, made pursuant to this Agreement will be subject to withholding of applicable taxes.

14. Waiver. No Party shall be deemed to have waived any right, power or privilege under this Agreement or any provisions hereof unless such waiver shall have been duly executed in writing and acknowledged by the Party to be charged with such waiver. The failure of any Party at any time to insist on performance of any of the provisions of this Agreement shall in no way be construed to be a waiver of such provisions, nor in any way to affect the validity of this Agreement or any part hereof. No waiver of any breach of this Agreement shall be held to be a waiver of any other subsequent breach

15. Governing Law. This Agreement will be governed by the laws of the State of Washington (with the exception of its conflict of law provisions).

16. Conflict Waiver. Each of the Parties to this Agreement understands that Wilson Sonsini Goodrich & Rosati, Professional Corporation ("**WSGR**") is serving as counsel to the Company in connection with the transactions contemplated hereby, and that discussion of such transactions with Executive could be construed to create a conflict of interest. By executing this Agreement, the Parties hereto acknowledge the potential conflict of interest and waive the right to claim any conflict of interest at a later date. Furthermore, by executing this Agreement, the Parties acknowledge that if a conflict of interest exists and any litigation arises between Executive and the Company, WSGR would represent the Company. Executive represents and warrants that he has had the opportunity to seek independent counsel in his review of this and all related agreements and that he is not relying on WSGR for any legal, tax or other advice relating to such agreements.

17. Acknowledgment. Executive acknowledges that he has had the opportunity to discuss this matter with and obtain advice from his legal counsel, has had sufficient time to, and has carefully read and fully understands all the provisions of this Agreement, and is knowingly and voluntarily entering into this Agreement. Executive further acknowledges and agrees that, as of the date hereof, the Company has paid or provided all earned salary, wages, bonuses, accrued vacation/paid time off, leave, allowances,

reimbursable expenses, commissions, stock, stock options, vesting, and any and all other benefits and compensation that may be due to Executive.

18. Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original, and all such counterparts shall constitute but one instrument.

19. Effect of Headings. The section and subsection headings contained herein are for convenience only and shall not affect the construction hereof.

20. Construction of Agreement. This Agreement has been negotiated by the respective Parties, and the language shall not be construed for or against either Party.

21. Section 409A. The Section 409A paragraph of the Severance Policy are incorporated herein by reference.

22. Protected Activity Not Prohibited. Executive understands that nothing in this Agreement, or any other agreement or policy with or by the Company, shall in any way limit or prohibit Executive from engaging in any Protected Activity. For purposes of this Agreement, "**Protected Activity**" shall mean filing a charge, complaint, or report with, or otherwise communicating, cooperating, or participating in any investigation or proceeding that may be conducted by, any federal, state or local government agency or commission, including the Securities and Exchange Commission, the Equal Employment Opportunity Commission, the Occupational Safety and Health Administration, and the National Labor Relations Board ("**Government Agencies**"). Executive understands that in connection with such Protected Activity, Executive is permitted to disclose documents or other information as permitted by law, and without giving notice to, or receiving authorization from, the Company. Notwithstanding the foregoing, Executive agrees to take all reasonable precautions to prevent any unauthorized use or disclosure of any information that may constitute Company confidential information under the Confidentiality Agreement to any parties other than the Government Agencies. Executive further understands that "Protected Activity" does not include the disclosure of any Company attorney-client privileged communications. Any language in the Confidentiality Agreement, or any other agreement or policy of the Company, regarding Executive's right to engage in Protected Activity that conflicts with, or is contrary to, this paragraph is superseded by this provision. In addition, pursuant to the Defend Trade Secrets Act of 2016, Executive is notified that an individual will not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (a) is made in confidence to a federal, state, or local government official (directly or indirectly) or to an attorney solely for the purpose of reporting or investigating a suspected violation w, or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if (and only if) such filing is made under seal. In addition, an individual who files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the individual's attorney and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal and does not disclose the trade secret, except pursuant to court order.

23. Clawback Provisions. Notwithstanding any other provisions in this Agreement to the contrary, any incentive-based compensation, or any other compensation, paid to Executive pursuant to this Agreement or any other agreement or arrangement with the Company or any of its affiliates, which is subject to recovery under any law, government regulation or stock exchange listing requirement, will be subject to such deductions and clawback as may be required to be made pursuant to such law, government regulation or stock exchange listing requirement (or any policy adopted by the Company or any of their affiliates pursuant to any such law, government regulation or stock exchange listing requirement), including for any violations of the Confidentiality Agreement, if applicable.

[*Remainder of page is intentionally blank; Signature page follows*]

IN WITNESS WHEREOF, each of the Parties has executed this Agreement as of the day and year first above written.

"COMPANY"

ALPINE IMMUNE SCIENCES, INC.

By: /s/ Mitchell Gold
Name: Mitchell Gold
Its: Chief Financial Officer

Address: 201 Elliott Avenue West, Suite 230
Seattle, WA 98119

Fax Number: _____

"EXECUTIVE"

PAUL RICKEY

/s/ Paul Rickey
Paul Rickey

Address: _____

_____

_____

Fax Number: _____

SCHEDULE 1

Grant Date	Number of Shares	Vesting Commencement Date	Exercise Price	Vesting Schedule
04/12/2017	63,434	04/01/2017	$5.02	(1)
4/12/2017	11,101	04/01/2017	$5.02	(1)
01/02/2018	45,000	01/02/2018	$11.31	(1)

(1) 1/4th of the shares shall vest on the one-year anniversary of the Vesting Commencement Date, and 1/36th of the remaining shares shall vest on each monthly anniversary thereafter, such that 100% of the shares shall be fully vested and exercisable as of the 4-year anniversary of the Vesting Commencement Date.

EXHIBIT A

(CONFIDENTIALITY AGREEMENT)

Exhibit 10.36

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is made as of August 14, 2016, by and between Alpine Immune Sciences, Inc., a Delaware corporation ("Company"), and Dr. Stanford Peng, MD, an individual ("Executive"). Each of Company and Executive may be referred to individually as a "party" or collectively as the "parties."

WITNESSETH:

WHEREAS, the parties are entering into this Agreement in order to set forth the terms and conditions under which the Executive shall be employed by Company.

AGREEMENT:

NOW, THEREFORE, for and in consideration of the mutual promises, covenants and obligations contained herein, Company and Executive agree as follows:

ARTICLE 1
EMPLOYMENT AND DUTIES

1.1 **Employment; Effective Date**. Executive's employment with the Company shall commence as of September 6, 2016 (the "Effective Date"). Effective as of the Effective Date, and continuing until the time set forth in Article 2 of this Agreement, Executive's employment by Company shall be subject to the terms and conditions of this Agreement.

1.2 **Position**. From and after the Effective Date, Company shall employ Executive as the Chief Medical Officer of Company, reporting to the CEO of Company.

1.3 **Duties and Services**. Executive agrees to serve Company as the Chief Medical Officer, and to perform diligently and to the best of his abilities the duties and services appertaining to such office, as well as such additional duties and services appropriate to such office which the parties mutually may agree upon from time to time. Executive's employment shall also be subject to the policies maintained and established by Company that are of general applicability to Company's executive employees, as such policies may be amended from time to time.

1.4 **Other Interests**. Executive agrees, during the period of his employment by Company, to devote substantially all of his business time, energy and best efforts to the business and affairs of Company and its affiliates and not to engage, directly or indirectly, in any other business or businesses, whether or not similar to that of Company, except with the consent of the Company's board of directors (the "Board"), which consent shall not be unreasonably withheld. The foregoing notwithstanding, the parties recognize and agree that Executive may engage in charitable and civic pursuits without the consent of the Board, as long as Executive is not actively involved in the operation of such businesses and such pursuits do not conflict with the business and affairs of Company or its affiliates or interfere with Executive's performance of his duties hereunder, which shall be in the determination of the Board whose approval shall not be unreasonably withheld.

1.5 **Duty of Loyalty**. Executive acknowledges and agrees that Executive owes a fiduciary duty of loyalty to act at all times in the best interests of Company. In keeping with such duty, Executive

shall make full disclosure to Company of all business opportunities pertaining to Company's business and shall not appropriate for Executive's own benefit business opportunities concerning Company's business.

ARTICLE 2
TERM AND TERMINATION OF EMPLOYMENT

2.1 **Term**. The initial term of employment under this Agreement (the "Initial Term") shall be for the period beginning on the Effective Date and ending on the third (3rd) anniversary of the Effective Date, unless earlier terminated as provided in paragraph 2.2. The employment term hereunder shall automatically be extended for successive one (1)-year periods commencing with the third (3rd) anniversary of the Effective Date ("Extension Terms" and, collectively with the Initial Term, the "Term") unless earlier terminated in accordance with this Agreement.

2.2 **Company's Right to Terminate**. Notwithstanding the provisions of paragraph, Company shall have the right to terminate Executive's employment under this Agreement for any of the following reasons:

(i) upon Executive's death;

(ii) upon Executive's disability, which shall mean Executive's becoming incapacitated by accident, sickness, or other circumstances which renders him mentally or physically incapable of performing the duties and services required of him hereunder for ninety (90) or more days (whether or not consecutive) out of any consecutive one hundred eighty (180)-day period, unless any of the days would constitute leave under the Family and Medical Leave Act;

(iii) for "Cause," which shall mean Executive has (A) engaged in gross negligence, gross incompetence or willful misconduct in the performance of the duties required of him hereunder; (B) refused without proper reason to perform the reasonable and lawful duties and reasonable and lawful responsibilities required of him hereunder causing material injury to the Company or its affiliates (monetarily or otherwise), and failed to cure such breach (in the event that such breach is capable of being cured) within thirty (30) days following written receipt of notice from the Company setting forth in reasonable detail the nature of such breach; (C) materially breached any provision of this Agreement and failed to cure such breach (in the event that such breach is capable of being cured) within thirty (30) days following receipt of notice from the Company setting forth in reasonable detail the nature of such breach; (D) willfully engaged in conduct that is materially injurious to Company or its affiliates (monetarily or otherwise); (E) committed an act of fraud, embezzlement or willful breach of fiduciary duty to Company or an affiliate (including the unauthorized disclosure of confidential or proprietary material information of Company or an affiliate); or (F) been convicted of (or pleaded no contest to) a crime involving fraud, dishonesty or moral turpitude or any felony; or

(iv) at any time for any other reason, or for no reason whatsoever, in the sole discretion of the Board.

2.3 **Executive's Right to Terminate**. Notwithstanding the provisions of paragraph, Executive shall have the right to terminate his employment under this Agreement for any of the following reasons:

(i) for "Good Reason," which shall mean, in connection with or based upon, without Executive's consent, (A) a material diminution in Executive's Base Salary (as defined below),

other than in connection with an across the board salary reduction or deferral that applies proportionately to all employees of the Company in conjunction with a capital shortfall; (B) a material diminution in Executive's responsibilities, duties or authority, including a diminution in Executive's job title or reporting relationship (provided that a change in the CEO shall not constitute a diminution in reporting relationship); or (C) a material breach by Company of any material provision of this Agreement; or

(ii) at any time for any other reason, or for no reason whatsoever, in the sole discretion of Executive.

2.4 Notice of Termination. If Company desires to terminate Executive's employment hereunder at any time it shall do so by giving a thirty (30)-day written notice to Executive that it has elected to terminate Executive's employment hereunder and stating the effective date and reason for such termination, provided, however, that that no such action shall alter or amend any other provisions hereof or rights arising hereunder; and provided, further, however, that the Company may terminate Executive's employment relationship with the Company immediately upon written notice to Executive in the event the Company terminates Executive's employment for Cause and no cure period applies. If Executive desires to terminate his employment hereunder at any time he shall do so by giving a thirty (30)-day written notice to Company that he has elected to terminate his employment hereunder and stating the effective date and reason for such termination, provided, however that no such action shall alter or amend any other provisions hereof or rights arising hereunder. In the case of any notice by Executive of his intent to terminate his employment hereunder for Good Reason, Executive shall provide Company with notice of the existence of the condition(s) constituting the Good Reason within thirty (30) days after the initial existence of such condition(s) and Company shall have thirty (30) days following Executive's provision of such notice to remedy such condition(s). If Company remedies the condition(s) constituting the Good Reason within such thirty (30)-day period, then Executive's employment hereunder shall continue and his notice of termination shall become void and of no further effect. If Company does not remedy the condition(s) constituting the Good Reason within such thirty (30)-day period, Executive's employment with Company shall terminate on the date that is thirty-one (31) days following the date of Executive's notice of termination and Executive shall be entitled to receive the payments and benefits described in paragraph 4.3.

2.5 Deemed Resignations. Unless otherwise agreed and approved by the Board, any termination of Executive's employment shall constitute an automatic resignation of Executive as an officer of Company and each affiliate of Company, and if applicable, an automatic resignation of Executive from the Board and from the board of directors or similar governing body of any affiliate of Company, and an automatic resignation from the board of directors or similar governing body of any corporation, limited liability company or other entity in which Company or any affiliate holds an equity interest and with respect to which board or similar governing body Executive serves as Company's or such affiliate's designee or other representative.

ARTICLE 3
COMPENSATION AND BENEFITS

3.1 Base Salary. During the Term, the Executive shall receive an initial base salary at a rate of U.S. Three Hundred Seventy Five Thousand Dollars (U.S. $375,000) per annum, and such salary shall be paid in accordance with the customary payroll practices of the Company, subject to annual review by the Board in its sole discretion (the "Base Salary").

3.2 Initial Stock Option Grant. In connection with the commencement of Executive's employment relationship with the Company, the Company will recommend that the Board grant

Executive an option (the "Option") to purchase up to Three Hundred Twenty Five Thousand (325,000) shares of the Company's Common Stock (the "Common Stock"), subject to approval of the Board of Directors and to the terms of the Company's 2015 Stock Plan and Stock Option Agreement, with an exercise price per share equal to the fair market value of the Common Stock on the date of grant (as determined in good faith by the Board of Directors). Unless otherwise determined by the Board of Directors, the Option will vest as follows:

(i) Vesting Schedule. One-fourth (1/4th) of the Option shall vest and become exercisable on the twelve (12)-month anniversary of the Effective Date, and one thirty-sixth (1/36th) of the remaining number of shares shall vest each month thereafter, such that one hundred percent (100%) of the shares subject to the Option shall be vested and exercisable as of the four (4) year anniversary of the Effective Date. Subject to the provisions of Section 3.2(ii) below, continued vesting of the Option will stop on the date Executive's employment or consulting relationship with the Company is terminated.

(ii) Double Trigger Acceleration. In the event of a Change of Control (as defined below), if: (1) Executive is terminated without Cause by the Company or the successor corporation or a parent or subsidiary of such successor corporation of the Company (the "Successor Corporation") within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the Change of Control transaction; or (2) Executive terminates his or her employment or consulting relationship with the Company or the Successor Corporation, each as applicable, for Good Reason within the ninety (90) day period prior to the consummation of the Change of Control transaction or within twelve (12) months following consummation of the transaction, then the Option or any cancelled, assumed, or substituted Option held by Executive in lieu of the Option at the time of Executive's termination shall become fully accelerated and fully vested immediately prior to the effective date of termination. As used herein, "Change of Control" shall mean a sale of all or substantially all of the Company's assets, or any stock sale, merger, or consolidation of the Company with or into another corporation or business entity other than a stock sale, merger, or consolidation in which the holders of more than fifty percent (50%) of the shares of capital stock of the Company outstanding immediately prior to such transaction continue to hold (either by the voting securities remaining outstanding or by their being converted into voting securities of the surviving entity) more than fifty percent (50%) of the total voting power represented by the voting securities of the Company, or such surviving entity, outstanding immediately after such transaction; provided, however, that a bona fide equity financing by the Company will not be deemed to be a Change of Control.

3.3 Subsequent Grants. Subject to the discretion of the Board of Directors, Executive shall be eligible to receive future grants of stock options or purchase rights from time to time in the future, on such terms and subject to such conditions as the Board shall determine as of the date of any such grant.

3.4 Benefit Plan Eligibility. Executive shall be entitled to: (i) participate in the Company's healthcare coverage plan and 401(k) or similar retirement plan; and (ii) receive paid vacation and sick leave, with levels to be determined by the Company's Board (or, if established, the Compensation Committee), all upon the same terms as such benefits are made available to other senior executives of the Company.

3.5 Reimbursement of Expenses. Executive shall be entitled to payment or reimbursement of all reasonable, ordinary, and necessary business expenses incurred by Executive in the performance of his responsibilities and the promotion of the Company's business, including but not limited to professional expenses such as memberships and medical licensing, provided that those expenses are

consistent with Company policy and limits. Executive shall submit to the Company periodic statements of all expenses so incurred. Subject to such reviews as the Company may deem necessary, the Company shall reimburse Executive the full amount of any such expenses advanced by him in the ordinary course of business.

ARTICLE 4
EFFECT OF TERMINATION ON COMPENSATION

4.1 **In General**. Upon a termination of Executive's employment for any reason, the Executive (or the Executive's estate) shall be entitled to receive the sum of Executive's Base Salary through the date of termination not theretofore paid; any unpaid expense reimbursements owed to the Executive under paragraph 3.5; and any amount arising from Executive's participation in, or benefits under, any employee benefit plans, programs or arrangements under paragraph 3.4 (including without limitation, any disability or life insurance benefit plans, programs or arrangements), which amounts shall be payable in accordance with the terms and conditions of such employee benefit plans, programs or arrangements. Except as otherwise provided in this Article 4, all of Executive's rights to salary, fringe benefits and other compensation hereunder shall cease upon such date of termination, other than those expressly required under applicable law.

4.2 **Termination by Company**. If Executive's employment hereunder shall be terminated by Company at any time for reasons other than those provided in Sections 2.2(i), (ii), or (iii), then Company shall: (a) provide Executive with a cash payment equal to one-fourth (1/4th) of Executive's Base Salary at the rate in effect under paragraph 3.1 on the date of such termination; (b) provide for the participation of Executive and/or his dependents, as applicable, in the Company's medical and dental benefits in which they are enrolled at the time of such termination for a period of three (3) months following the termination date of Executive's employment, at Company's expense, to the extent that such continuation is permitted at the time of such termination under the terms of such Company benefit plans and insurance arrangements, and if such continuation is not permitted then Company shall reimburse Executive for the cost of Executive procuring the same or substantially similar benefits himself, unless Executive is otherwise eligible to receive benefit coverage of a roughly equivalent nature by virtue of his employment with any subsequent employer; and (c) accelerate the vesting of Executive's Option by a period of twelve (12) months, provided Executive agrees to remain reasonably available to consult with the Company, on an as needed as requested basis, for a period of twelve (12) months, on any issues reasonably requested by Company. Subject to paragraph 4.4, any cash payment due to Executive in accordance with this section shall be paid to Executive in three equal monthly installments over the three month period following the date of Executive's termination of employment with Company.

4.3 **Termination by Executive**. If Executive's employment hereunder shall be terminated by Executive for Good Reason, then Company shall: (a) provide Executive with a cash payment equal to one-fourth (1/4th) Executive's Base Salary at the rate in effect under paragraph 3.1 on the date of such termination; (b) provide for the participation of Executive and/or his dependents, as applicable, in the Company's medical and dental benefits in which they are enrolled at the time of such termination for a period of three (3) months following the termination date of Executive's employment, at Company's expense, to the extent that such continuation is permitted at the time of such termination under the terms of such Company benefit plans and insurance arrangements, and if such continuation is not permitted then Company shall reimburse Executive for the cost of Executive procuring the same or substantially similar benefits himself, unless Executive is otherwise eligible to receive benefit coverage of a roughly equivalent nature by virtue of his employment with any subsequent employer; and (c) accelerate the vesting of Executive's Option by a period of twelve (12) months, provided Executive agrees to remain reasonably available to consult with the Company, on an as needed as requested basis, for a period of

twelve (12) months, on any issues reasonably requested by Company. Subject to paragraph 4.4, any cash payment due to Executive in accordance with this section shall be paid to Executive in three equal monthly installments over the three month period following the date of Executive's termination of employment with Company.

4.4 **Release and Full Settlement**. Anything to the contrary herein notwithstanding, as a condition to the receipt of the additional termination payments and benefits under paragraph 4.2 or 4.3 hereof, as applicable, Executive shall first execute a release, in the form established by the Board, releasing the Board, Company, and Company's parent corporation, subsidiaries, affiliates, and their respective shareholders, owners, partners, officers, directors, employees, attorneys and agents from any and all claims and from any and all causes of action of any kind or character including, but not limited to, all claims or causes of action arising out of Executive's employment with Company or its affiliates or the termination of such employment, but excluding all claims to vested benefits and payments Executive may have under any compensation or benefit plan, program or arrangement, including this Agreement. Executive shall provide such release no later than thirty (30) days after the date of his termination of employment with Company and, as a condition to Company's obligation to provide the additional termination payments and benefits in accordance with paragraphs 4.2 and 4.3, Executive shall not revoke such release. The performance of Company's obligations hereunder and the receipt of any termination payments and benefits provided under paragraphs 4.2 and 4.3 shall constitute full settlement of all such claims and causes of action, subject to the limitations set forth above.

4.5 **Liquidated Damages**. In light of the difficulties in estimating the damages for an early termination of Executive's employment under this Agreement, Company and Executive hereby agree that the payments and benefits, if any, to be received by Executive pursuant to this Article 4 shall be received by Executive as liquidated damages.

4.6 **Section 409A Matters**. Notwithstanding any provision in this Agreement to the contrary, if Executive is a specified employee (within the meaning of Section 409A(a)(2)(B)(i) of the Internal Revenue Code of 1986, as amended (the "Code"), and applicable administrative guidance thereunder and determined in accordance with any method selected by Company that is permitted under the regulations issued under Section 409A of the Code), and the payment of any amount or benefit under this Agreement to or on behalf of Executive would be subject to additional taxes and interest under Section 409A of the Code because the timing of such payment is not delayed as provided in Section 409A(a)(2)(B)(i) of the Code and the regulations thereunder, then any such payment or benefit that Executive would otherwise be entitled to during the first six (6) months following the date of Executive's separation from service (within the meaning of Section 409A(a)(2)(A)(i) of the Code and applicable administrative guidance thereunder) shall be accumulated and paid or provided, as applicable, on the date that is six (6) months after Executive's separation from service (or if such date does not fall on a business day of Company, the next following business day of Company), or such earlier date upon which such amount can be paid or provided under Section 409A of the Code without being subject to such additional taxes and interest; provided, however, that Executive shall be entitled to receive the maximum amount permissible under Section 409A of the Code and the applicable administrative guidance thereunder during the six-month period following his separation from service that will not result in the imposition of any additional tax or penalties on such amount. For all purposes of this Agreement, Executive shall be considered to have terminated employment with Company when Executive incurs a "separation from service" with Company within the meaning of Section 409A(a)(2)(A)(i) of the Code and the applicable administrative guidance issued thereunder. To the extent that any reimbursements pursuant to this Agreement are taxable to the Executive, any reimbursement payment due to the Executive pursuant to such provision shall be paid to the Executive on or before the last day of the Executive's taxable year following the taxable year in which the related expense was incurred. The Executive agrees to provide

prompt notice to the Company of any such expenses (and any other documentation that the Company may reasonably require to substantiate such expenses) in order to facilitate the Company's timely reimbursement of the same. The reimbursements and benefits pursuant to this Agreement are not subject to liquidation or exchange for another benefit and the amount of such reimbursements and benefits that the Executive receives in one taxable year shall not affect the amount of such reimbursements or benefits that the Executive receives in any other taxable year. To the extent that Section 409A of the Code is applicable to this Agreement, the provisions of this Agreement shall be interpreted as necessary to comply with such section and the applicable administrative guidance issued thereunder.

4.7 **Other Benefits**. This Agreement governs the rights and obligations of Executive and Company with respect to Executive's Base Salary, initial stock option grant, benefits, and certain perquisites of employment. Except as expressly provided herein, Executive's rights and obligations both during the term of his employment and thereafter with respect to his direct and indirect ownership rights in Company, and other benefits under the plans and programs maintained by Company, shall be governed by the separate agreements, plans and the other documents and instruments governing such matters.

ARTICLE 5
PROTECTION OF CONFIDENTIAL INFORMATION

5.1 **PIIA**. Executive acknowledges and agrees that all compensation paid to Executive by the Company pursuant to this Agreement is conditioned upon Executive signing a Proprietary Information and Inventions Agreement in the form attached hereto as Exhibit A, which is incorporated herein by this reference. Executive hereby covenants to abide by the terms and conditions of the PIIA, including, but not limited to, the assignment of inventions and confidentiality provisions of the PIIA.

5.2 **Remedies**. Executive acknowledges that money damages would not be sufficient remedy for any breach of this Article 5 by Executive, and Company or its affiliates shall be entitled to enforce the provisions of this Article 5 by terminating payments then owing to Executive under this Agreement or otherwise and to specific performance and injunctive relief as remedies for such breach. Such remedies shall not be deemed the exclusive remedies for a breach of this Article 5 but shall be in addition to all remedies available at law or in equity, including the recovery of damages from Executive and his agents.

ARTICLE 6
NON-COMPETITION AND NON-SOLICITATION OBLIGATIONS

6.1 **Non-Competition and Non-Solicitation Obligations**. As part of the consideration for the compensation and benefits to be paid to Executive hereunder; to protect the trade secrets and confidential information of Company that have been or will in the future be disclosed or entrusted to Executive, the business good will of Company and its affiliates that has been and will in the future be developed in Executive, or the business opportunities that have been and will in the future be disclosed or entrusted to Executive by Company and its affiliates; Company and Executive agree to the following provisions:

(i) Executive hereby agrees that during the term of his direct or indirect employment or consulting relationship with the Company (as the case may be), and for a period of twelve (12) months following the termination of his employment or consulting relationship with the Company (as the case may be) for any reason, Executive shall not directly or indirectly solicit, induce, recruit, hire or encourage any of the Company's employees or consultants to terminate their relationship with the Company, or attempt any of the foregoing, either for himself or any other person or entity. For a period of twelve (12) months following termination of Executive's employment or consulting relationship with the Company (as the case may be) for any reason,

Executive hereby covenants not to solicit any licensor to or customer of the Company or licensee of the Company's products, that are known to him with respect to any business, products or services that are competitive to the products or services offered by the Company or under development as of the date of termination of his relationship with the Company. In the event that Executive's employment with the Company is terminated by the Company without Cause or if Executive resigns for Good Reason, then the twelve (12) month periods referenced above in this section shall each be reduced to six (6) months.

(ii) Executive hereby agrees that during the term of his direct or indirect employment or consulting relationship with the Company (as the case may be) and for twelve (12) months following the termination of his employment or consulting relationship with the Company (as the case may be) for any reason, he will not, without the Company's prior written consent, directly or indirectly work on any products or services that are competitive with products or services (a) being commercially developed or exploited by the Company during his employment or consultancy with the Company (as the case may be) and (b) on which he worked or about which he learned Proprietary Information (as defined in the PIIA) during his employment or consultancy with the Company (as the case may be). In the event that Executive's employment with the Company is terminated by the Company without Cause or if Executive resigns for Good Reason, then the twelve (12) month period referenced above in this section shall be reduced to six (6) months.

6.2 **Enforcement and Remedies**. Executive acknowledges that money damages would not be sufficient remedy for any breach of this Article 6 by Executive, and Company shall be entitled to enforce the provisions of this Article 6 by terminating any payments then owing to Executive under this Agreement and/or to specific performance and injunctive relief as remedies for such breach. Such remedies shall not be deemed the exclusive remedies for a breach of this Article 6, but shall be in addition to all remedies available at law or in equity to Company, including, without limitation, the recovery of damages from Executive and Executive's agents involved in such breach and remedies available to Company pursuant to other agreements with Executive.

6.3 **Reformation**. It is expressly understood and agreed that Company and Executive consider the restrictions contained in this Article 6 to be reasonable and necessary to protect the proprietary information of Company and its affiliates. Nevertheless, if any of the aforesaid restrictions are found by a court having jurisdiction to be unreasonable, or overly broad as to geographic area or time, or otherwise unenforceable, the parties intend for the restrictions therein set forth to be modified by such courts so as to be reasonable and enforceable and, as so modified by the court, to be fully enforced.

ARTICLE 7
NONDISPARAGEMENT

Executive agrees not to disparage the Company, any of its products or practices, or any of its directors, officers, employees, agents, representatives, stockholders or affiliates, either orally or in writing, at any time and the Company and its Affiliates shall not and shall instruct members of the Board and executive officers of the Company not to disparage the Executive, either orally or in writing, at any time; *provided*, that, either party may confer in confidence with its legal representatives and make truthful statements as required by law or as required by any applicable rules of professional conduct.

ARTICLE 8
MISCELLANEOUS

8.1 **Notices**. For purposes of this Agreement, notices and all other communications provided for herein shall be in writing and shall be deemed to have been duly given when personally delivered or when mailed by United States registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

To the Company:	Alpine Immune Sciences, Inc. Stewart St., Ste. 1503 Seattle, WA 98101
With copy to:	Van Katzman Ascent Law Partners, LLP 719 Second Ave, Ste. 1150 Seattle, WA 98104
To Executive:	Dr. Stanford Peng, MD 33rd Ave. NE Seattle, WA 98115

or to such other address as either party may furnish to the other in writing in accordance herewith, except that notices or changes of address shall be effective only upon receipt.

8.2 **Applicable Law**. This Agreement is entered into under, and shall be governed for all purposes by the laws of the State of Washington.

8.3 **No Waiver**. No failure by either party hereto at any time to give notice of any breach by the other party of, or to require compliance with, any condition or provision of this Agreement shall be deemed a waiver of similar or dissimilar provisions or conditions at the same or at any prior or subsequent time.

8.4 **Severability**. If a court of competent jurisdiction determines that any provision of this Agreement is invalid or unenforceable, then the invalidity or unenforceability of that provision shall not affect the validity or enforceability of any other provision of this Agreement, and all other provisions shall remain in full force and effect.

8.5 **Counterparts**. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which together will constitute one and the same agreement.

8.6 **Withholding of Taxes and Other Employee Deductions**. Company may withhold from any benefits and payments made pursuant to this Agreement or otherwise all federal, state, city and other taxes as may be required pursuant to any law or governmental regulation or ruling and all other normal employee deductions made with respect to Company's employees generally.

8.7 **Headings**. The paragraph headings have been inserted for purposes of convenience and shall not be used for interpretive purposes.

8.8 **Affiliate**. As used in this Agreement, the term "affiliate" shall mean any entity which owns or controls, is owned or controlled by, or is under common ownership or control with, Company.

8.9 **Assignment**. This Agreement shall be binding upon and inure to the benefit of Company and any successor of Company, by merger or otherwise. This Agreement shall also be binding and inure to the benefit of Executive and his heirs. Except as provided in the preceding sentence, this Agreement, and the rights and obligations of the parties hereunder, are personal and neither this Agreement, nor any right, benefit, or obligation of either party hereto, shall be subject to voluntary or involuntary assignment, alienation or transfer, whether by operation of law or otherwise, without the prior written consent of the other party.

8.10 **Term**. This Agreement has a term co-extensive with the term of employment provided in Article 2. Termination shall not affect any right or obligation of any party which is accrued or vested prior to such termination. The provisions of paragraphs 2.5, 4.4 to 4.7 and Articles 5, 6, 7 and 8 shall survive any termination of this Agreement.

8.11 **Entire Agreement**. This Agreement, the PIIA, the 2015 Stock Plan, and the Stock Option Agreement will constitute the entire agreement of the parties with regard to the subject matter hereof, and will contain all the covenants, promises, representations, warranties and agreements between the parties with respect to employment of Executive by Company. Without limiting the scope of the preceding sentence, all understandings and agreements preceding the date of execution of this Agreement and relating to the subject matter hereof are as of the Effective Date superseded by this Agreement and null and void and of no further force and effect. Any modification of this Agreement will be effective only if it is in writing and signed by the party to be charged.

8.12 **Liability Insurance**. Company may maintain a directors' and officers' insurance liability policy throughout the term of this Agreement and may provide Executive with coverage under such policy consistent with those provided to other Company directors and officers.

8.13 **Arbitration**.

(i) Company and Executive agree to submit to final and binding arbitration any and all disputes or disagreements concerning the interpretation or application of this Agreement, the termination of this Agreement, or any other aspect of the Executive's employment relationship with Company. Any such dispute or disagreement will be resolved by arbitration in accordance with the National Rules for the Resolution of Employment Disputes of the American Arbitration Association before a single arbitrator. Arbitration will take place in Seattle, Washington, unless the parties mutually agree to a different location. Company and Executive agree that the decision of the arbitrator will be final and binding on both parties. Any court having jurisdiction may enter a judgment upon the award rendered by the arbitrator. The costs of the proceedings shall be borne equally by the parties unless the arbitrator orders otherwise.

(ii) Notwithstanding the provisions of paragraph 8.13(i), Company may, if it so chooses, bring an action in any court of competent jurisdiction for temporary or preliminary injunctive relief to enforce Executive's obligations under Articles 5 (including the PIIA), 6 or 7 hereof, pending a decision by the arbitrator in accordance with paragraph 8.13(i).

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement to be effective as of the Effective Date.

EXECUTIVE:
DR. STANFORD PENG, MD,
an individual

By: /s/ Dr. Stanford Peng, MD
Name: Dr. Stanford Peng, MD

COMPANY:
ALPINE IMMUNE SCIENCES, INC.,
a Delaware corporation

By: /s/ David D. Miller
Name: David D. Miller
Its: Director of Operations

EXHIBIT A

PIIA

9050608_1.docx

Exhibit 10.37

ALPINE IMMUNE SCIENCES, INC.
AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT

THIS AMENDED AND RESTATED EXECUTIVE EMPLOYMENT AGREEMENT (the "**Agreement**") is entered into as of January 1, 2018 (the "**Effective Date**") between Alpine Immune Sciences, Inc. (the "**Company**"), and Stanford Peng ("**Executive**") (collectively referred to as the "**Parties**" or individually as a "**Party**").

R E C I T A L S

WHEREAS, the Company desires to continue to employ Executive as its Executive Vice President of Research and Development and Chief Medical Officer, and to enter into an agreement embodying the terms of such continued at-will employment;

WHEREAS, Executive desires to accept such continued employment and enter into such an agreement.

A G R E E M E N T

NOW, THEREFORE, in consideration of the premises and mutual covenants herein and for other good and valuable consideration, the Parties agree as follows:

1. Duties and Scope of Employment.

(a) Positions and Duties. As of the Effective Date, Executive will continue to serve as Executive Vice President of Research and Development and Chief Medical Officer of the Company, subject to the terms and conditions of this Agreement. Executive will continue to render such business and professional services in the performance of his duties, consistent with Executive's position within the Company, as shall continue to be reasonably be assigned to him by the Company and, as such, from and after the date hereof, shall report directly to and shall be subject to the direction of the Chief Executive Officer. The period of Executive's continued at-will employment under the terms of this Agreement is referred to herein as the "Employment Term."

(b) Obligations. During the Employment Term, Executive will continue to perform his duties faithfully and to the best of his ability and will continue to devote his full business efforts and time to the Company. For the duration of the Employment Term, and as before, Executive agrees not to actively engage in any other employment, occupation or consulting activity for any direct or indirect remuneration without the prior written approval of the Board.

2. At-Will Employment. Subject to Sections 6 below, the parties agree that Executive's employment with the Company will continue to be "at-will" employment and, as such, may be terminated at any time with or without cause or notice, for any reason or no reason. Executive further understands and agrees that, as before, neither his job performance nor promotions, commendations, bonuses or the like from the Company give rise to or in any way serve as the basis for modification, amendment, or extension, by implication or otherwise, of his employment with the Company.

3. Compensation.

(a) Base Salary. During the Employment Term, the Company will pay Executive as compensation for his services a base salary at a rate of $400,000 per year, as modified from time to time at the discretion of the Board or a duly constituted committee of the Board (the "**Base Salary**"). The Base Salary, as before, will be paid in regular installments in accordance with the Company's normal payroll practices (subject to required withholding). Any modification in Base Salary (together with the then existing Base Salary) shall serve as the "Base Salary" for future employment under this Agreement. The first and last payment will be adjusted, if necessary, to reflect a commencement or termination date other than the first or last working day of a pay period.

(b) Annual Bonus. During the Employment Term, for each calendar year, Executive shall be eligible to earn an annual discretionary bonus based upon the achievement of certain Company and individual goals as determined by the Company in its discretion after consultation with Executive (the "**Annual Bonus**"). The Board will determine in its discretion whether the performance objectives for any Annual Bonus have been achieved. In connection with the Annual Bonus, subject to the corresponding performance levels being achieved, the Executive shall be eligible for an annual target bonus of up to 35% of the Executive's Base Salary (the "**Target Bonus**") with an annual maximum bonus equal to 100% of the Target Bonus. The Board does, however, retain the option of increasing the Annual Bonus in any given year by an additional discretionary amount in the event Executive significantly exceeds the above-referenced performance objectives for that year, as determined, in all cases, by the Board in its sole discretion. Any such Annual Bonus (including any additional discretionary increase, if awarded by the Board) will be determined and, to the extent earned, paid on an annual basis, at the time and manner in which such bonuses are normally paid to employees at Executive's level, but in no event will such payment be made later than March 15 of the year following the year such Annual Bonus was earned. Receipt of any Annual Bonus is contingent upon Executive's continued employment with the Company through the date the Annual Bonus is earned and any Annual Bonus for a calendar year will not be considered earned if Executive is terminated prior to December 1. No "pro-rated" or partial bonus will be provided in the event of Executive's earlier separation from employment, except as provided by this Agreement.

(c) Equity. The Executive acknowledges and agrees that Executive has been previously awarded the options to purchase shares of the Company's common stock detailed in Schedule 1 hereto, subject to the terms, definitions and conditions, including vesting requirements, of the relevant stock option agreements between Executive and the Company (the "**Option Agreements**") and the Company's Amended and Restated 2015 Stock Plan and 2015 Equity Incentive Plan, as applicable (the "**Equity Plans**").

4. Employee Benefits. During the Employment Term, Executive will be continue to be eligible to participate in the employee benefit plans currently and hereafter maintained by the Company of general applicability to similarly-situated senior executives of the Company, subject to the terms and conditions of the applicable policies. The Company, as before, reserves the right to cancel or change the benefit plans and programs it offers to its employees at any time.

5. Business Expenses. During the Employment Term, the Company will reimburse Executive for reasonable business travel, entertainment or other business expenses incurred by Executive in the furtherance of or in connection with the performance of Executive's duties hereunder, in accordance with the Company's expense reimbursement policy as in effect from time to time. Except as expressly provided otherwise herein, no reimbursement payable to the Executive pursuant to any provision of this

Agreement or pursuant to any plan or arrangement of the Company shall be paid later than the last day of the calendar year following the calendar year in which the related expense was incurred, and no such reimbursement during any calendar year shall affect the amounts eligible for reimbursement in any other calendar year, except, in each case, to the extent that the right to reimbursement does not provide for a "deferral of compensation" within the meaning of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**"), and the final regulations and any formal guidance issued thereunder ("**Section 409A**").

6. Termination and Severance. As discussed above, the Company shall be entitled to terminate Executive at any time and for any reason, and Executive shall be entitled to resign at any time and for any reason. Executive may, however, be entitled to receive certain severance benefits in connection with his separation from employment under the Company's Change of Control and Severance Policy (the "**Severance Policy**"). Any such severance, if applicable, will be subject to the terms and conditions of the Severance Policy, as may be amended or modified from time to time.

7. Company Matters.

(a) Proprietary Information and Inventions. Executive acknowledges and agrees that, as a condition of his continued employment, he is required to sign and abide by the terms of the At-Will Employment, Confidential Information, Invention Assignment, and Arbitration Agreement (the "**Confidentiality Agreement**"), including the arbitration agreement and provisions governing the non-disclosure of confidential information and restrictive covenants contained therein. A copy of the Confidentiality Agreement is attached hereto as Exhibit A.

(b) Ventures. If, during his employment and as before, Executive is engaged in or associated with planning or implementing of any project, program or venture involving the Company and any third parties, all rights in such project, program or venture shall belong to the Company (or third party, to the extent provided in any agreement between the Company and the third party). Except as approved by the Board in writing, Executive shall not be entitled to any interest in such project, program or venture or to any commission, finder's fee or other compensation in connection therewith other than the salary or other compensation to be paid to Executive as provided in this Agreement.

(c) Notification of New Employer. In the event that Executive leaves the employ of the Company, Executive grants consent to notification by the Company to Executive's new employer about his rights and obligations under this Agreement and the Confidentiality Agreement.

8. ARBITRATION. IN CONSIDERATION OF EXECUTIVE'S EMPLOYMENT WITH THE COMPANY, ITS PROMISE TO ARBITRATE ALL EMPLOYMENT-RELATED DISPUTES AND EXECUTIVE'S RECEIPT OF THE COMPENSATION, PAY RAISES AND OTHER BENEFITS PAID TO EXECUTIVE BY THE COMPANY, AT PRESENT AND IN THE FUTURE, EXECUTIVE AGREES THAT ANY AND ALL CONTROVERSIES, CLAIMS, OR DISPUTES WITH ANYONE (INCLUDING THE COMPANY AND ANY EMPLOYEE, OFFICER, DIRECTOR, SHAREHOLDER OR BENEFIT PLAN OF THE COMPANY, IN THEIR CAPACITY AS SUCH OR OTHERWISE), ARISING OUT OF, RELATING TO, OR RESULTING FROM EXECUTIVE'S EMPLOYMENT WITH THE COMPANY OR THE TERMINATION OF EXECUTIVE'S EMPLOYMENT WITH THE COMPANY, INCLUDING ANY BREACH OF THIS AGREEMENT, SHALL BE SUBJECT TO BINDING ARBITRATION, AS SET FORTH IN THE CONFIDENTIALITY AGREEMENT.

9. Assignment. This Agreement will be binding upon and inure to the benefit of (a) the heirs, executors and legal representatives of Executive upon Executive's death and (b) any successor of the Company. Any such successor of the Company will be deemed substituted for the Company under the terms of this Agreement for all purposes. For this purpose, "successor" means any person, firm, corporation or other business entity which at any time, whether by purchase, merger or otherwise, directly or indirectly acquires all or substantially all of the assets or business of the Company. None of the rights of Executive to receive any form of compensation payable pursuant to this Agreement may be assigned or transferred except by will or the laws of descent and distribution. Any other attempted assignment, transfer, conveyance or other disposition of Executive's right to compensation or other benefits will be null and void.

10. Notices. All notices, requests, demands and other communications called for under this Agreement shall be in writing and shall be delivered personally by hand or by courier, mailed by United States first-class mail, postage prepaid, or sent by facsimile directed to the Party to be notified at the address or facsimile number indicated for such Party on the signature page to this Agreement, or at such other address or facsimile number as such Party may designate by ten (10) days' advance written notice to the other Parties hereto. All such notices and other communications shall be deemed given upon personal delivery, three (3) days after the date of mailing, or upon confirmation of facsimile transfer.

11. Severability. In the event that any provision hereof becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable or void, this Agreement will continue in full force and effect without said provision.

12. Integration. This Agreement, together with the Severance Policy, the Equity Plans, the Option Agreements and the Confidentiality Agreement, represents the entire agreement and understanding between the parties as to the subject matter herein and supersedes all prior or contemporaneous agreements whether written or oral, including the Employment Agreement dated as of August 14, 2016 by and between the Company and Executive (the "**Prior Employment Agreement**"). The Executive and Company acknowledge and agree that the Prior Employment Agreement shall be of no further force and effect. No waiver, alteration, or modification of any of the provisions of this Agreement will be binding unless in writing and signed by duly authorized representatives of the parties hereto.

13. Tax Withholding. All payments, as before, made pursuant to this Agreement will be subject to withholding of applicable taxes.

14. Waiver. No Party shall be deemed to have waived any right, power or privilege under this Agreement or any provisions hereof unless such waiver shall have been duly executed in writing and acknowledged by the Party to be charged with such waiver. The failure of any Party at any time to insist on performance of any of the provisions of this Agreement shall in no way be construed to be a waiver of such provisions, nor in any way to affect the validity of this Agreement or any part hereof. No waiver of any breach of this Agreement shall be held to be a waiver of any other subsequent breach

15. Governing Law. This Agreement will be governed by the laws of the State of Washington (with the exception of its conflict of law provisions).

16. Conflict Waiver. Each of the Parties to this Agreement understands that Wilson Sonsini Goodrich & Rosati, Professional Corporation ("**WSGR**") is serving as counsel to the Company in connection with the transactions contemplated hereby, and that discussion of such transactions with

Executive could be construed to create a conflict of interest. By executing this Agreement, the Parties hereto acknowledge the potential conflict of interest and waive the right to claim any conflict of interest at a later date. Furthermore, by executing this Agreement, the Parties acknowledge that if a conflict of interest exists and any litigation arises between Executive and the Company, WSGR would represent the Company. Executive represents and warrants that he has had the opportunity to seek independent counsel in his review of this and all related agreements and that he is not relying on WSGR for any legal, tax or other advice relating to such agreements.

17. Acknowledgment. Executive acknowledges that he has had the opportunity to discuss this matter with and obtain advice from his legal counsel, has had sufficient time to, and has carefully read and fully understands all the provisions of this Agreement, and is knowingly and voluntarily entering into this Agreement. Executive further acknowledges and agrees that, as of the date hereof, the Company has paid or provided all earned salary, wages, bonuses, accrued vacation/paid time off, leave, allowances, reimbursable expenses, commissions, stock, stock options, vesting, and any and all other benefits and compensation that may be due to Executive.

18. Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed to be an original, and all such counterparts shall constitute but one instrument.

19. Effect of Headings. The section and subsection headings contained herein are for convenience only and shall not affect the construction hereof.

20. Construction of Agreement. This Agreement has been negotiated by the respective Parties, and the language shall not be construed for or against either Party.

21. Section 409A. The Section 409A paragraph of the Severance Policy are incorporated herein by reference.

22. Protected Activity Not Prohibited. Executive understands that nothing in this Agreement, or any other agreement or policy with or by the Company, shall in any way limit or prohibit Executive from engaging in any Protected Activity. For purposes of this Agreement, "**Protected Activity**" shall mean filing a charge, complaint, or report with, or otherwise communicating, cooperating, or participating in any investigation or proceeding that may be conducted by, any federal, state or local government agency or commission, including the Securities and Exchange Commission, the Equal Employment Opportunity Commission, the Occupational Safety and Health Administration, and the National Labor Relations Board ("**Government Agencies**"). Executive understands that in connection with such Protected Activity, Executive is permitted to disclose documents or other information as permitted by law, and without giving notice to, or receiving authorization from, the Company. Notwithstanding the foregoing, Executive agrees to take all reasonable precautions to prevent any unauthorized use or disclosure of any information that may constitute Company confidential information under the Confidentiality Agreement to any parties other than the Government Agencies. Executive further understands that "Protected Activity" does not include the disclosure of any Company attorney-client privileged communications. Any language in the Confidentiality Agreement, or any other agreement or policy of the Company, regarding Executive's right to engage in Protected Activity that conflicts with, or is contrary to, this paragraph is superseded by this provision. In addition, pursuant to the Defend Trade Secrets Act of 2016, Executive is notified that an individual will not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (a) is made in confidence to a federal, state, or local government official (directly or indirectly) or to an attorney solely for the purpose of reporting or investigating a suspected violation of law, or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if (and only if) such filing is made under seal. In addition, an individual who

files a lawsuit for retaliation by an employer for reporting a suspected violation of law may disclose the trade secret to the individual's attorney and use the trade secret information in the court proceeding, if the individual files any document containing the trade secret under seal and does not disclose the trade secret, except pursuant to court order.

23. Clawback Provisions. Notwithstanding any other provisions in this Agreement to the contrary, any incentive-based compensation, or any other compensation, paid to Executive pursuant to this Agreement or any other agreement or arrangement with the Company or any of its affiliates, which is subject to recovery under any law, government regulation or stock exchange listing requirement, will be subject to such deductions and clawback as may be required to be made pursuant to such law, government regulation or stock exchange listing requirement (or any policy adopted by the Company or any of their affiliates pursuant to any such law, government regulation or stock exchange listing requirement), including for any violations of the Confidentiality Agreement, if applicable.

[*Remainder of page is intentionally blank; Signature page follows*]

IN WITNESS WHEREOF, each of the Parties has executed this Agreement as of the day and year first above written.

"COMPANY"

ALPINE IMMUNE SCIENCES, INC.

By: /s/ Paul Rickey
Name: Paul Rickey
Its: Chief Financial Officer

Address: 201 Elliott Avenue West, Suite 230
Seattle, WA 98119

Fax Number:

"EXECUTIVE"

STANFORD PENG

/s/ Stanford Peng
Stanford Peng

Address:

Fax Number:

AMENDED AND RESTATED EXECUTIVE
EMPLOYMENT AGREEMENT SIGNATURE PAGE

SCHEDULE 1

Grant Date	Number of Shares	Vesting Commencement Date	Exercise Price	Vesting Schedule
09/22/2016	161,492	09/06/2016	$0.65	(1)
03/14/2017	37,267	09/06/2016	$0.65	(1)
01/02/2018	65,000	01/02/2018	$11.31	(1)

(1) 1/4th of the shares shall vest on the one-year anniversary of the Vesting Commencement Date, and 1/36th of the remaining shares shall vest on each monthly anniversary thereafter, such that 100% of the shares shall be fully vested and exercisable as of the 4-year anniversary of the Vesting Commencement Date.

EXHIBIT A

(CONFIDENTIALITY AGREEMENT)

Exhibit 21.1

SUBSIDIARIES OF ALPINE IMMUNE SCIENCES, INC.

Name of Subsidiary	**State or other Jurisdiction of Incorporation**
AIS Operating Co., Inc.	Delaware

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-3 No. 333-212404) of Nivalis Therapeutics, Inc.,

(2) Registration Statement (Form S-8 No. 333-205220) pertaining to the 2012 Stock Incentive Plan of N30 Pharmaceuticals, Inc., 2015 Equity Incentive Plan of Nivalis Therapeutics, Inc. and Employee Stock Purchase Plan of Nivalis Therapeutics, Inc.,

(3) Registration Statement (Form S-8 No. 333-211197) pertaining to the Employment Inducement Awards of Nivalis Therapeutics, Inc.,

(4) Registration Statement (Post-Effective Amendment No. 1 on Form S-8 to Form S-4 No. 333-218134) pertaining to the Amended and Restated 2015 Stock Plan of Alpine Immune Sciences, Inc., as amended,

of our report dated March 28, 2018, with respect to the consolidated financial statements of Alpine Immune Sciences, Inc., included in this Annual Report (Form 10-K) of Alpine Immune Sciences, Inc. for the year ended December 31, 2017.

/s/ Ernst & Young LLP

Seattle, Washington
March 28, 2018

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mitchell Gold, certify that:

1. I have reviewed this Annual Report on Form 10-K of Alpine Immune Sciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 28, 2018

By: /s/ Mitchell Gold
Mitchell Gold
Executive Chairman and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Paul Rickey, certify that:

1. I have reviewed this Annual Report on Form 10-K of Alpine Immune Sciences, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 28, 2018

By: /s/ Paul Rickey
Paul Rickey
Senior Vice President and Chief Financial Officer
(Principal Accounting Officer and Principal Financial Officer)

Exhibit 32.1

ALPINE IMMUNE SCIENCES, INC.
CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Alpine Immune Sciences, Inc. (the "Company") on Form 10-K for the period ending December 31, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mitchell Gold, Executive Chairman and Chief Executive Officer *(Principal Executive Officer)* of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: March 28, 2018

By: /s/ Mitchell Gold
Mitchell Gold
Executive Chairman and Chief Executive Officer
(Principal Executive Officer)

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

This certification accompanies the Report to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Alpine Immune Sciences, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Report), irrespective of any general incorporation language contained in such filing.

Exhibit 32.2

ALPINE IMMUNE SCIENCES, INC.
CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Alpine Immune Sciences, Inc. (the "Company") on Form 10-K for the period ending December 31, 2017, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Paul Rickey, Senior Vice President and Chief Financial Officer *(Principal Accounting Officer and Principal Financial Officer)*, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

Date: March 28, 2018

By: /s/ Paul Rickey
Paul Rickey
Senior Vice President and Chief Financial Officer
(Principal Accounting Officer and Principal Financial Officer)

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

This certification accompanies the Report to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Alpine Immune Sciences, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Report), irrespective of any general incorporation language contained in such filing.