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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, 2020

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 001-38693

Allogene Therapeutics, Inc.

(Exact name of Registrant as specified in its Charter)

Delaware	**82-3562771**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

210 East Grand Avenue, South San Francisco, California 94080

(Address of principal executive offices including zip code)

Registrant's telephone number, including area code: (650) 457-2700

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

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Common Stock, Par Value $0.001 Per Share	ALLO	The Nasdaq Stock Market LLC

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

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

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 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 every Interactive Data File required to be submitted 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 such files). Yes ☒ No ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the 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	☐	Small reporting company	☐
		Emerging growth company	☐

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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 as of June 30, 2020 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately $3,509 million based on the closing price of the registrant's common stock on June 30, 2020 of $42.82 per share, as reported by The Nasdaq Global Select Market.

The number of shares of Registrant's Common Stock outstanding as of February 22, 2021 was 140,647,818.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Definitive Proxy Statement relating to the 2021 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission within 120 days after the end of the Registrant's fiscal year ended December 31, 2020, are incorporated by reference into Part III of this Report.

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Unless the context requires otherwise, references in this report to "Allogene," "we," "us" and "our" refer to Allogene Therapeutics, Inc., and references in this report to "Servier" collectively refer to Les Laboratoires Servier SAS and Institut de Recherches Internationales Servier SAS.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements. The forward-looking statements are contained principally in the sections entitled "Business," "Risk Factors," and "Management's Discussion and Analysis of Financial Condition and Results of Operations". These statements relate to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors which may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

- the success, cost, timing and potential indications of our product development activities and clinical trials;
- the timing of our planned investigational new drug application submissions to the U.S. Food and Drug Administration for our product candidates;
- the timing of the initiation, enrollment and completion of planned clinical trials in the United States and foreign countries;
- our ability to obtain and maintain regulatory approval of our product candidates in any of the indications for which we plan to develop them, and any related restrictions, limitations, and/or warnings in the label of an approved product candidate;
- our ability to obtain funding for our operations, including funding necessary to complete the clinical trials of any of our product candidates;
- our plans to research, develop and commercialize our product candidates;
- our ability to attract and retain collaborators with development, regulatory and commercialization expertise;
- the size of the markets for our product candidates, and our ability to serve those markets;
- our ability to successfully commercialize our product candidates;
- the rate and degree of market acceptance of our product candidates;
- our ability to develop and maintain sales and marketing capabilities, whether alone or with potential future collaborators;
- regulatory developments in the United States and foreign countries;
- our ability to contract with and the performance of our and our collaborators' third-party suppliers and manufacturers;
- our ability to develop and successfully operate our own manufacturing facility;
- the success of competing therapies that are or become available;
- our ability to attract and retain key scientific or management personnel;
- the accuracy of our estimates regarding expenses, future revenues, capital requirements and needs for additional financing;
- our use of cash and other resources; and
- our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidates and our ability to operate our business without infringing on the intellectual property rights of others.

In some cases, you can identify these statements by terms such as “anticipate,” “believe,” “could,” “estimate,” “expects,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “should,” “will,” “would” or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes. These forward-looking statements reflect our management’s beliefs and views with respect to future events and are based on estimates and assumptions as of the date of this report and are subject to risks and uncertainties. In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements. We discuss many of the risks associated with the forward-looking statements in this report in greater detail under the heading “Risk Factors.” Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Given these uncertainties, you should not place undue reliance on these forward-looking statements.

You should carefully read this report and the documents that we reference in this report and have filed as exhibits to the Form 10-K, of which this report is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in this report by these cautionary statements.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in any forward-looking statements, whether as a result of new information, future events or otherwise.

Trademarks and Trade names

This Annual Report on Form 10-K contains references to our trademarks and to trademarks belonging to other entities. Solely for convenience, trademarks and trade names referred to in this Annual Report, including logos, artwork and other visual displays, may appear without the ® or TM symbols, but such references are not intended to indicate, in any way, that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend our use or display of other companies’ trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

RISK FACTOR SUMMARY

Below is a summary of the material factors that make an investment in our common stock speculative or risky. This summary does not address all of the risks that we face. Additional discussion of the risks summarized in this risk factor summary, and other risks that we face, can be found below under the heading "Risk Factors" under Item 1A of Part I of this Annual Report" under Item 1A of Part I of this Annual Report, and should be carefully considered, together with other information in this Annual Report before making investment decisions regarding our common stock.

- We have incurred net losses in every period since our inception and anticipate that we will incur substantial net losses in the future.
- Our engineered allogeneic T cell product candidates represent a novel approach to cancer treatment that creates significant challenges for us.
- Gene-editing is a relatively new technology, and if we are unable to use this technology in our intended product candidates, our revenue opportunities will be materially limited.
- The COVID-19 global pandemic is adversely impacting our business, including our preclinical studies and clinical trials.
- We are heavily reliant on our partners for access to key gene editing technology for the manufacturing and development of our product candidates.
- Our product candidates are based on novel technologies, which makes it difficult to predict the time and cost of product candidate development and obtaining regulatory approval.
- Our business is highly dependent on the success of our lead product candidates. If we are unable to advance clinical development, obtain approval of and successfully commercialize our lead product candidates for the treatment of patients in approved indications, our business would be significantly harmed.
- Our product candidates may cause undesirable side effects or have other properties that could halt their clinical development, prevent their regulatory approval, limit their commercial potential or result in significant negative consequences.
- Our clinical trials may fail to demonstrate the safety and efficacy of any of our product candidates, which would prevent or delay regulatory approval and commercialization.
- Initial, interim and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.
- We may encounter substantial delays in our clinical trials, or may not be able to conduct our trials on the timelines we expect.
- If we encounter difficulties enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.
- We face significant competition from other biotechnology and pharmaceutical companies, and our operating results will suffer if we fail to compete effectively.
- We are highly dependent on our key personnel, and if we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.
- We will need substantial additional financing to develop our products and implement our operating plans. If we fail to obtain additional financing, we may be unable to complete the development and commercialization of our product candidates.
- We rely and will continue to rely on third parties to conduct our clinical trials and manufacture our product candidates. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may not be able to obtain regulatory approval of or commercialize our product candidates.
- We rely on the availability of suitable donor material and other specialty raw materials, which may not be available to us on acceptable terms or at all.
- The FDA may disagree with our regulatory plan and we may fail to obtain regulatory approval of our CAR T cell product candidates.
- We depend on intellectual property licensed from third parties and termination of any of these licenses could result in the loss of significant rights, which would harm our business.
- If our efforts to protect the proprietary nature of the intellectual property related to our technologies are not adequate, we may not be able to compete effectively in our market.

PART I

Item 1. Business

Overview

We are a clinical stage immuno-oncology company pioneering the development and commercialization of genetically engineered allogeneic T cell therapies for the treatment of cancer. We are developing a pipeline of off-the-shelf T cell product candidates that are designed to target and kill cancer cells. Our engineered T cells are allogeneic, meaning they are derived from healthy donors for intended use in any patient, rather than from an individual patient for that patient's use, as in the case of autologous T cells. We believe this key difference will enable us to deliver readily available treatments faster, more reliably, at greater scale, and to more patients.

Chimeric antigen receptor (CAR) T cell therapy, a form of cancer immunotherapy, has emerged as a revolutionary and potentially curative therapy for patients with hematologic cancers, including refractory cancers. In 2017, the first two autologous anti-CD19 CAR T cell therapies, Kymriah, developed by Novartis International AG (Novartis), and Yescarta, developed by Kite Pharma, Inc. (Kite), were approved by the U.S. Food and Drug Administration (FDA) for the treatment of relapsed/refractory (R/R) B-cell precursor acute lymphoblastic leukemia (ALL) (Kymriah) and R/R large B-cell lymphoma (Yescarta). Autologous CAR T cell therapies are manufactured individually for the patient's use by modifying the patient's own T cells outside the body, causing the T cells to express CARs. The entire manufacturing process is dependent on the viability of each patient's T cells and takes approximately two to four weeks. As seen in the registrational trials for Kymriah and Yescarta, up to 31% of intended patients ultimately did not receive treatment primarily due to interval complications from the underlying disease during manufacturing or manufacturing failures.

Our allogeneic approach involves engineering healthy donor T cells, which we believe will allow for the creation of an inventory of off-the-shelf products that can be delivered to a larger portion of eligible patients throughout the world. These potential benefits led our Executive Chairman, Arie Belldegrun, M.D., FACS, who was previously the Chairman and Chief Executive Officer at Kite, and our President and Chief Executive Officer, David Chang, M.D., Ph.D., previously Chief Medical Officer and Executive Vice President of Research and Development at Kite, to found our company with the driving purpose of accelerating the development of allogeneic CAR T cell therapies.

We have multiple clinical trials ongoing and have a deep pipeline to further the research and development of allogeneic CAR T cell product candidates in both hematological malignancies and solid tumors. We believe our management team's experience in immuno-oncology and specifically in CAR T cell therapy will help drive the rapid development and, if approved, the commercialization of potentially curative therapies for patients with aggressive cancer.

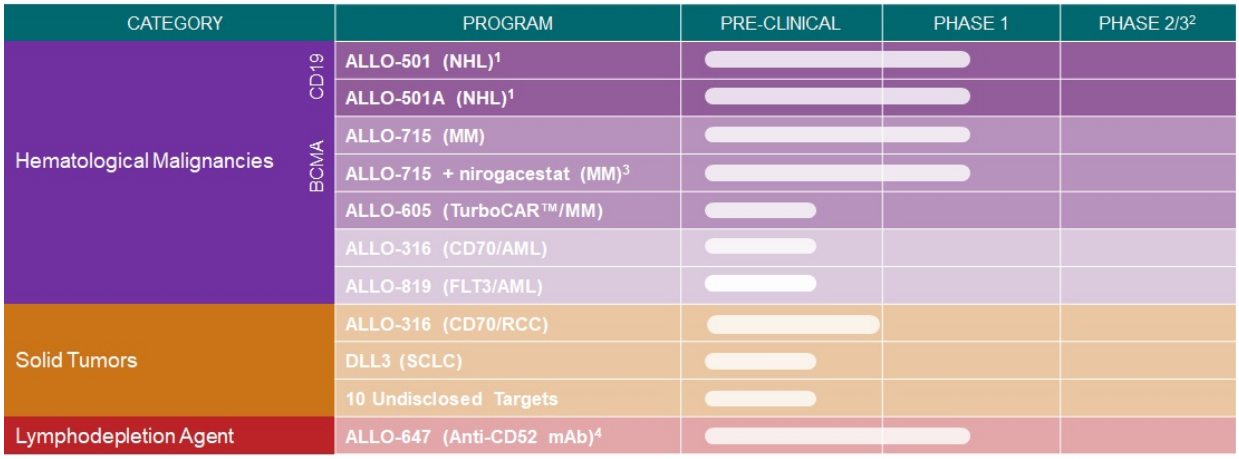
Our Approach

Our allogeneic T cell development strategy has four key pillars: (1) engineering product candidates to minimize the risk of graft-versus-host disease (GvHD), a condition where allogeneic T cells can recognize the patient's normal tissue as foreign and cause damage, (2) creating a window of persistence that may enable allogeneic T cells to expand and eradicate cancer cells in patients, (3) building a leading manufacturing platform to enable consistent and high quality production and (4) leveraging next generation technologies to improve the functionality of allogeneic CAR T cells.

We use Cellectis, S.A. (Cellectis), TALEN gene-editing technology with the goal of limiting the risk of GvHD by engineering T cells to lack functional T cell receptors (TCRs) that are no longer capable of recognizing a patient's normal tissue as foreign. With the goal of enhancing the expansion and persistence of our engineered allogeneic T cells, we use TALEN to inactivate the CD52 gene in donor T cells and an anti-CD52 monoclonal antibody to deplete CD52 expressing T cells in patients while sparing the therapeutic allogeneic T cells. We believe this enables a window of persistence for the infused allogeneic T cells to actively target and destroy cancer cells. We are also developing ALLO-647, our own anti-CD52 monoclonal antibody, which is designed to be used prior to infusing our other product candidates as part of a lymphodepletion regimen. Our off-the-shelf approach is dependent on state-of-the-art manufacturing processes, and we are building a technical operations organization with fully integrated in-house expertise in clinical and commercial engineered T cell manufacturing. In February 2019, we entered into a lease to build our own cell therapy manufacturing facility in Newark, California, and we expect to commence current good manufacturing practices (cGMP) manufacturing at our facility in 2021. Finally, we plan to leverage next generation technologies to develop more potent product candidates and to develop product candidates from a renewable cell source. We believe next generation technologies will also allow us to develop allogeneic T cell therapies for the treatment of solid tumors, which to date have been difficult to treat because of the lack of validated targets and tumor microenvironments that can impair the activity of T cells.

Our Pipeline

We are currently developing a pipeline of multiple allogeneic CAR T cell product candidates utilizing protein engineering, gene editing, gene insertion and advanced proprietary T cell manufacturing technologies. Our most advanced product candidates, ALLO-501 and ALLO-501A, are engineered allogeneic CAR T cell therapies that target CD19, a protein expressed on the cell surface of B cells and a validated target for B cell driven hematological malignancies. We are also developing engineered allogeneic CAR T cell product candidates for multiple myeloma, clear cell renal cell carcinoma (ccRCC), and other blood cancers and solid tumors. Our pipeline is represented in the diagram below.



[1] *Servier holds ex-US commercial rights.*
[2] *Phase 3 may not be required if Phase 2 is registrational.*
[3] *Allogene sponsored trial in combination with SpringWorks Therapeutics, Inc.*
[4] *ALLO-647 intended to enable expansion and persistence of allogeneic CAR T product candidates.*

Our lead product candidates include:

- *ALLO-501.* We are sponsoring a Phase 1 clinical trial (the ALPHA trial) of ALLO-501 in patients with the most common R/R non-Hodgkin lymphoma (NHL) subtypes. This includes R/R large B-cell lymphoma and R/R follicular lymphoma (FL). In May 2020, initial results from the ALPHA trial were presented at the American Society of Clinical Oncology (ASCO) annual meeting. See "—Product Pipeline and Development Strategy—Anti-CD19 Development Program—Initial Phase 1 Results from the ALPHA Trial" for information regarding the initial data results. We are continuing the ALPHA trial to further explore ALLO-501 and lymphodepletion dose and schedule. We plan to report updated clinical data from the ALPHA trial in the second quarter of 2021.

- *ALLO-501A.* We have removed rituximab recognition domains in our second-generation version of ALLO-501, known as ALLO-501A, which we believe will potentially facilitate treatment of more patients, as rituximab is a typical part of a treatment regimen for a patient with NHL. We initiated a Phase 1/2 clinical trial for ALLO-501A (the ALPHA2 trial) in the second quarter of 2020. The Phase 1 portion of the ALPHA2 trial is designed to assess the safety and tolerability at increasing dose levels of ALLO-501A in patients with R/R large B-cell lymphoma or transformed FL. We plan to report initial clinical data from the ALPHA2 trial in the second quarter of 2021. Subject to data, we plan to proceed to the Phase 2 portion of the trial by the end of 2021.

- *ALLO-715.* We are sponsoring a Phase 1 clinical trial (the UNIVERSAL trial) of ALLO-715, an allogeneic CAR T cell product candidate targeting B-cell maturation antigen (BCMA), in adult patients with R/R multiple myeloma. In December 2020, initial results from the UNIVERSAL trial were presented at the American Society of Hematology (ASH) annual meeting. See "—Product Pipeline and Development Strategy—Anti-BCMA Development Program—Initial Phase 1 Results from the UNIVERSAL Trial" for information regarding the initial data results. We are continuing the UNIVERSAL trial to further explore ALLO-715 and lymphodepletion dose and schedule. We plan to report updated clinical data from the UNIVERSAL trial in the fourth quarter of 2021.

- *ALLO-715 plus nirogacestat.* We recently initiated an expansion of the UNIVERSAL trial to assess ALLO-715 in combination with SpringWorks Therapeutics, Inc.'s investigational gamma secretase inhibitor, nirogacestat. We believe nirogacestat has the potential to increase the cell surface density of BCMA and reduce levels of soluble BCMA, thereby enhancing the activity of ALLO-715.

- *ALLO-605.* We are advancing ALLO-605, an allogeneic CAR T cell product candidate targeting BCMA and our first product candidate to incorporate our TurboCAR technology, for multiple myeloma. TurboCAR technology allows cytokine signaling to be engineered selectively into CAR T cells and has shown the ability to improve the potency and persistence of the cells and to prevent and delay exhaustion of the cells in preclinical models. We expect to submit an investigational new drug application (IND) in the first half of 2021 to initiate a Phase 1 clinical trial of ALLO-605.

- *ALLO-316.* Following the clearance of an IND in December 2020, we plan to initiate a Phase 1 clinical trial (the TRAVERSE trial) of ALLO-316, an allogeneic CAR T cell product candidate targeting CD70, in adult patients with advanced or metastatic ccRCC in the first quarter of 2021. We also plan to investigate the use of ALLO-316 for a second indication in R/R acute myeloid leukemia (AML).

- *ALLO-647*. We are developing an anti-CD52 monoclonal antibody, ALLO-647, which is a component of our lymphodepletion regimen. ALLO-647 may be able to reduce the likelihood of a patient's immune system rejecting the engineered allogeneic T cells for a sufficient period of time to enable a window of persistence during which our engineered allogeneic T cells can actively target and destroy cancer cells. We are currently utilizing ALLO-647 in all of our clinical trials.

Our History and Team

We believe we have established a leadership position in allogeneic T cell therapy. In April 2018, we acquired certain assets from Pfizer Inc. (Pfizer), including strategic license and collaboration agreements and other intellectual property related to the development and administration of allogeneic CAR T cells for the treatment of cancer. We have an exclusive collaboration with Servier to develop and commercialize ALLO-501 and ALLO-501A, and we hold the commercial rights to these product candidates in the United States. We also have an exclusive worldwide license from Cellectis to its TALEN gene-editing technology for the development of allogeneic T cell product candidates directed against 15 different cancer antigens. Our collaboration with Servier is intended to give us access to TALEN gene-editing technology for all product candidates we are co-developing. In connection with the Pfizer asset acquisition, we hired a team of employees from Pfizer, who are primarily research and technical operation employees and were leading the research and development of our product candidates and next generation gene engineering and cell engineering technologies at Pfizer.

Our world-class management team has significant experience in immuno-oncology and in progressing products from early stage research to clinical trials, and ultimately to regulatory approval and commercialization. In particular, Dr. Belldegrun's experience in T cell therapy dates back to his time at the National Cancer Institute as a research fellow in surgical oncology and immunotherapy with Steven Rosenberg, M.D., Ph.D, a recognized pioneer in immuno-oncology. Our President and Chief Executive Officer, Dr. Chang, served as Executive Vice President of Kite and held senior leadership roles at Amgen, Inc. (Amgen). Moreover, both Dr. Belldegrun and Dr. Chang led the development and approval of Yescarta at Kite. Additionally, our Chief Technical Officer, Alison Moore, Ph.D., was previously Senior Vice President, Process Development at Amgen, where she led the development, deployment and oversight of manufacturing for approximately 80 multi-modality assets. Dr. Moore has over 25 years of experience in biotechnology, including in the immuno-oncology space leading process development of Amgen's comprehensive bi-specific T cell engager production platform. In September 2019, Rafael Amado, M.D., joined us as our Executive Vice President of Research and Development and Chief Medical Officer. Dr. Amado has more than 15 years of biotechnology and pharmaceutical industry experience leading clinical and research teams, and he most recently served as President, Research and Development, at Adaptimmune Therapeutics plc, a T cell therapy company, from August 2018 to August 2019, and as Chief Medical Officer from March 2015.

Our Strategy

Our goal is to maintain and build upon our leadership position in allogeneic T cell therapy. We plan to rapidly develop and, if approved, commercialize allogeneic T cell products for the treatment of cancer that can be delivered faster, more reliably and at greater scale than autologous T cell therapies. We believe achieving this goal could result in allogeneic T cell therapy becoming a standard of care in cancer treatment and enable us to make potentially curative therapies more readily accessible to more patients throughout the world. Key elements of our strategy include:

- ***Capitalize on a validated target and our leadership in engineered allogeneic anti-CD19 CAR T cell product candidates.*** Autologous anti-CD19 CAR T cell therapies, such as Kymriah and Yescarta, have emerged as potentially curative therapies for B-cell lymphomas and leukemias. We believe developing allogeneic CAR T cell product candidates targeting CD19 is the next frontier in delivering potentially curative therapies against B-cell lymphomas and leukemias. We believe our efforts to advance ALLO-501A and, subject to our clinical data, proceed to the Phase 2

portion of the ALPHA2 trial by the end of 2021 would give us a leadership advantage to obtain the potential first approval of an anti-CD19 allogeneic CAR T cell product candidate.

- ***Expand our leadership position within hematologic indications.*** In addition to ALLO-501A, we plan to advance our near-term pipeline against additional hematologic targets where there remains a high unmet need. For example, we have a three-part strategy to target BCMA for the treatment of patients with R/R multiple myeloma. We believe BCMA is a promising target, as results from clinical trials of third-party autologous CAR T cell therapeutic candidates targeting BCMA have produced encouraging data. The first part of our strategy is to continue to advance the UNIVERSAL trial of ALLO-715, which is the first trial of an allogeneic CAR T therapy targeting BCMA. We plan to report updated data from the UNIVERSAL trial in the fourth quarter of 2021. Second, we are utilizing the UNIVERSAL trial to assess ALLO-715 in combination with nirogacestat. Third, we expect to submit an IND in the first half of 2021 to initiate a Phase 1 clinical trial of ALLO-605, our first TurboCAR candidate. We also plan to develop additional allogeneic T cell product candidates targeting other antigens found on hematologic malignancies, including ALLO-316 targeting CD70 and ALLO-819 targeting FLT3, each for the treatment of AML.

- ***Build state-of-the-art gene engineering and cell manufacturing capabilities.*** Manufacturing allogeneic T cell product candidates involves a series of complex and precise steps. We believe a critical component to our success will be to leverage and expand our proprietary manufacturing know-how, expertise and capacity. In February 2019, we entered into a lease for approximately 118,000 square feet to develop a state-of-the-art cell therapy manufacturing facility in Newark, California. We are phasing the build-out of the facility, and completed the build-out of the majority of the facility at the end of 2020. We plan to initiate manufacturing under cGMP in 2021. We believe establishing our own fully integrated manufacturing operations and infrastructure will allow us to improve the manufacturing process, limit our reliance on contract manufacturing organizations (CMOs) and more rapidly advance product candidates.

- ***Expand into solid tumor indications with high unmet need and leverage next generation technologies to advance our platform.*** We plan to continue to advance the research and development of product candidates directed against a broad portfolio of solid tumor targets, including CD70 for the treatment of ccRCC and DLL3 for the treatment of small cell lung cancer and other aggressive neuroendocrine tumors. We also plan to leverage next generation technologies to make more potent allogeneic CAR T cells and improve the characteristics of our product candidates. For example, we expect to advance a TurboCAR product candidate, ALLO-605, to the clinic this year and we are also advancing modified next-generation TurboCARs to overcome some of the challenges of the solid tumor microenvironment. In addition, we are investigating next-generation technologies to overcome rejection of allogeneic CAR T cells by the patient immune system and to increase specificity of CAR T activity to avoid potential normal tissue toxicities associated with certain solid tumor targets. In collaboration with Notch Therapeutics Inc. (Notch), we are researching and developing a process for production of product candidates derived from induced pluripotent stem cells (iPSCs). We believe iPSCs may provide renewable starting material for our allogeneic CAR T cell product candidates that could allow for improved efficiency of gene editing, greater scalability of supply, product homogeneity and more streamlined manufacturing. In addition, we continually survey the scientific and industry landscape for opportunities to license, partner or acquire technologies that may help us advance current or new cell therapies for the benefit of patients.

- ***Accelerate the development of our product candidates across geographies***. We are positioning ourselves to pursue clinical development of our product candidates in additional markets around the world. Subject to our clinical progress in the United States, we plan to initiate clinical trials in the European Union and United Kingdom. In addition, in December 2020, we jointly formed Allogene Overland Biopharm (CY) Limited for the development, manufacturing and commercialization of certain of our product candidates targeting BCMA, CD70, FLT3, and DLL3 in China, Taiwan, South Korea and Singapore. We plan to support the operations of this joint venture as it advances and we may selectively partner with other third parties to develop and commercialize our product candidates in additional countries.

Allogeneic T Cell Therapy

The Immune System and Cancer

White blood cells are a component of the immune system and are responsible for defending the body against infectious pathogens and other foreign material. T cells are a type of white blood cell and are involved in both sensing and killing infected or abnormal cells, including cancer cells, as well as coordinating the activation of other cells in an immune response.

T cells can be distinguished from other white blood cells by T cell receptors present on their cell surface. These receptors contribute to tumor surveillance by directing T cells to recognize and destroy cancerous cells. When T cells with cancer-specific receptors are absent, present in low numbers, of poor quality or rendered inactive by suppressive mechanisms, cancer may grow and spread. In addition, standard of care treatments, such as chemotherapy regimens, as well as disease specific factors can damage the patient's immune system, thereby inhibiting the ability of T cells to kill cancer.

Engineered T Cell Therapies

Engineered T cell therapy is a type of immunotherapy treatment whereby human T cells are removed from the body and engineered to express CARs which, when infused into a patient, may allow the recognition and destruction of cancer cells in a targeted manner.

Chimeric Antigen Receptors (CARs)

CARs are engineered molecules that, when present on the surface of a T cell, enable the T cell to recognize specific proteins or antigens that are present on the surface of other cells. The CAR in our product candidates is comprised of a single chain protein that contains the following elements:

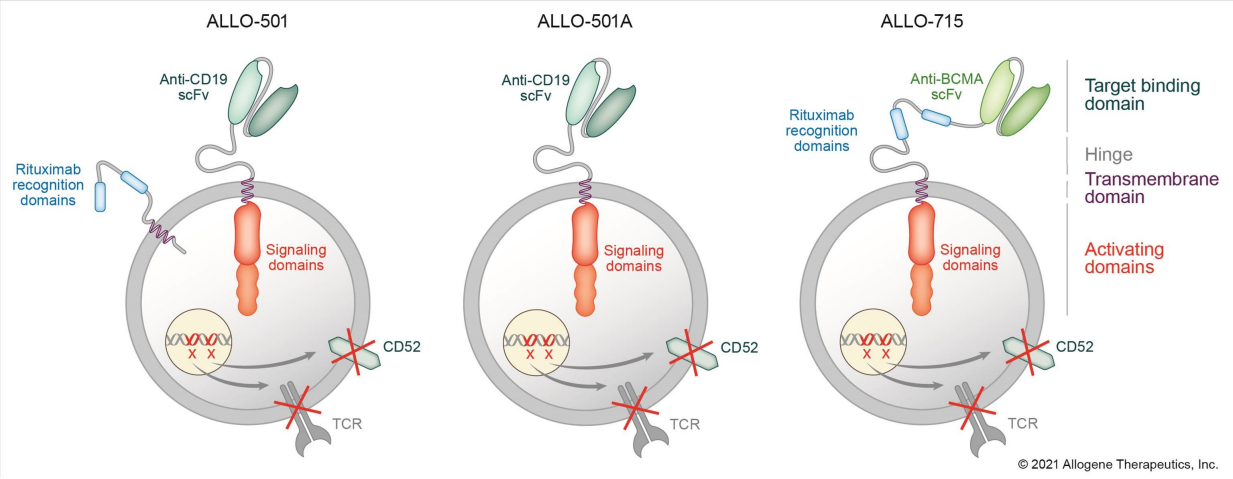
- *Target Binding Domain:* At one end of the CAR is a target binding domain that is specific to a target antigen. This domain extends out onto the surface of the engineered T cell, where it can recognize the target antigens. The target binding domain consists of a single-chain variable fragment (scFv) of an antibody comprising variable domains of heavy and light chains joined by a short linker.

- *Transmembrane Domain and Hinge:* This middle portion of the CAR links the scFv target binding domain to the activating elements inside the cell. This transmembrane domain "anchors" the CAR in the cell's membrane. In addition, the transmembrane domain may also interact with other transmembrane proteins that enhance CAR function. The hinge domain, which extends to the exterior of the cell, connects the transmembrane domain to scFv and provides structural flexibility to facilitate optimal binding of scFv to the target antigen on the cancer cell's surface.

- *Activating Domains:* The other end of transmembrane domain, inside the T cell, is connected to two contiguous domains responsible for activating the T cell when the CAR binds to the target cell. The CD3 zeta domain delivers an essential primary signal within the T cell, and the 41BB domain delivers an additional, co-stimulatory signal. Together, these signals trigger T cell activation, resulting in proliferation of the CAR T cells and killing of the cancer cell. In addition, activated CAR T cells stimulate the local secretion of cytokines and other molecules that can recruit and activate additional immune cells to potentiate killing of the cancer cells.

In addition to the domains described above, ALLO-715 possesses two rituximab-recognition domains between the scFv and the hinge which allow it to be recognized and eliminated by rituximab. ALLO-501 possesses rituximab recognition domains in a separate polypeptide termed RQR8 that is co-expressed with the CAR. We have removed rituximab recognition domains in ALLO-501A, which we believe will potentially facilitate treatment of more patients, as rituximab is a typical part of a treatment regimen for a patient with NHL.

The figure below shows the constructs that support our lead product candidates in clinical development: ALLO-501, ALLO-501A and ALLO-715.



Allogeneic T Cell Therapies: The Next Revolution

There are two primary approaches to engineered T cell therapy: autologous and allogeneic. Autologous therapies use engineered T cells derived from the individual patient, while allogeneic therapies use engineered T cells derived from unrelated healthy donors.

The autologous approach, pioneered by Novartis and Kite, has been highly successful in engineering patients' immune systems to fight cancer, in particular CD19 positive cancers, resulting in significant remission rates. Autologous products are manufactured by first collecting a patient's white blood cells, through a process known as leukapheresis, separating the T cells from the patient's blood sample and proliferating the isolated T cells. After the cells have multiplied, the CAR construct is virally transduced into the T cells and the engineered T cells are then propagated until a sufficient number of cells are available for infusion into the patient. Finally, the engineered T cells are frozen, and then shipped back to the clinical center for administration to the patient. The process from leukapheresis to delivery to the clinical center takes approximately two to four weeks.

While the autologous approach has been revolutionary, demonstrating compelling efficacy in many patients, it is burdened by the following key limitations:

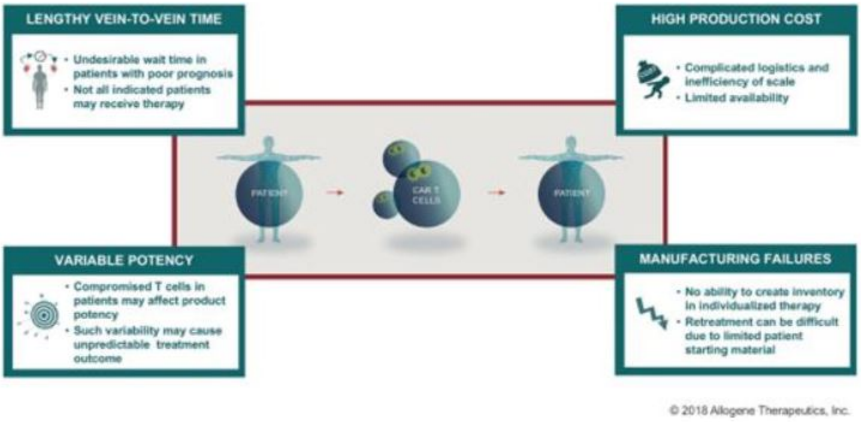
- ***Lengthy Vein-to-Vein Time***. Due to the individualized manufacturing process, patients must wait approximately two to four weeks to be treated with their engineered cells. As a result, in the registrational trials for Yescarta and Kymriah, up to 31% of intended patients ultimately did not receive treatment primarily due to interval complications from the underlying disease during manufacturing or manufacturing failures. In addition, certain patients being treated with autologous product candidates have required bridging therapy as they wait for the manufacture of their T cells. Bridging therapy to control disease may increase some cumulative or synergistic toxicities for the patients.

- ***Variable Potency***. In many cases, patients have T cells that have been damaged or weakened due to prior chemotherapy or hematopoietic stem-cell transplant. Compromised T cells may not proliferate well during manufacturing or may produce cells with insufficient potency that cannot be used for patient treatment, resulting in manufacturing failures, or that can show poor expansion and activity in patients. In addition, the individualized nature of autologous manufacturing, together with the variability in patients' T cells, may lead to variable potency of manufactured T cells, and this variability may cause unpredictable treatment outcomes.

- ***Manufacturing Failures***. Autologous cell manufacturing sometimes encounters production failures. This can mean that a patient never receives treatment, as additional patient starting material may not be available or the patient may no longer be eligible due to advanced disease. Furthermore, retreatment can be difficult due to a limited supply of usable patient starting material.

- ***High Production Cost***. The delivery of autologous T cell therapy is complicated due to the individualized nature of manufacturing, which allows only one patient to be treated from each manufacturing run and requires dedicated infrastructure to maintain a strict chain of custody and chain of identity of patient-by-patient material collection, manufacturing and delivery. The complex logistics add significant cost to the process and limit the ability to scale.

Additionally, the collection of T cells through leukapheresis from each individual patient results in a time consuming and costly step in the autologous process. In part due to these logistics, autologous treatment is currently only available at select centers.



Allogeneic engineered T cells are manufactured in a similar manner as autologous, but our manufacturing has two key differences: (1) our allogeneic T cells are derived from healthy donors, not cancer patients, and (2) our allogeneic T cells are genetically engineered to minimize the risk of GvHD and enable a window of persistence in the patient.

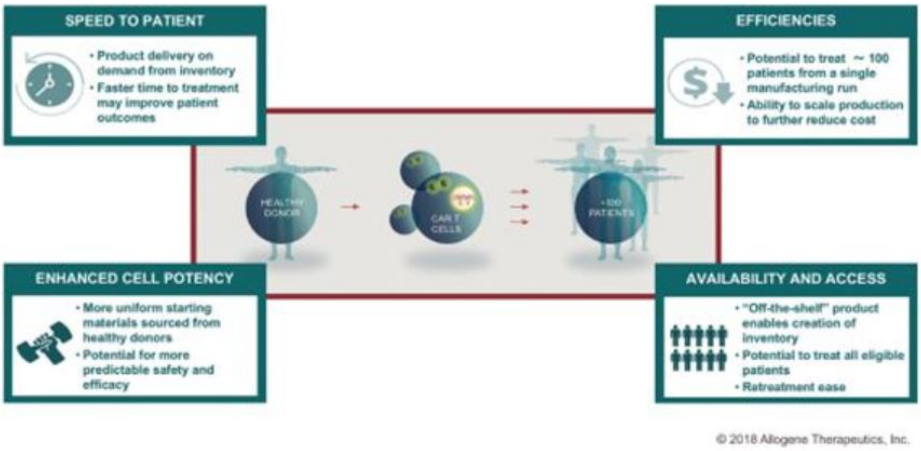
Our approach is designed to provide the same intended curative outcome as autologous therapy, while offering the following potential key advantages:

- ***Availability and Access***. Starting with T cells from a healthy donor, we believe that at scale we can manufacture approximately 100 doses of allogeneic product that could be used in any eligible patient. Because our allogeneic product candidates are designed to be frozen and available off-the-shelf, they could potentially be readily shipped and administered to patients. We believe having an inventory of off-the-shelf allogeneic T cell products can also facilitate delivering multiple product doses to a patient over time.

- ***Speed to Patient***. Many patients with aggressive cancer or rapidly progressing cancer that is refractory to existing therapies may not have multiple weeks to wait for autologous T cell treatment. Our allogeneic approach has the potential to create off-the-shelf product inventory, which could enable dosing of patients within days of a decision to treat. This would represent a significant reduction in patient wait time, potentially obviating the need for any bridging therapy and allowing the treatment of patients who are too sick to wait for the autologous therapy, and could improve patient outcomes.

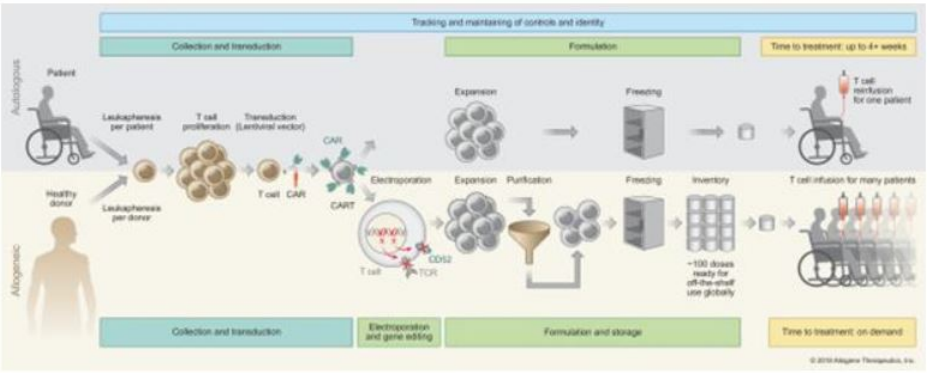
- ***Enhanced Cell Consistency and Potency***. Our manufacturing process produces therapies from selected, screened and tested healthy donors. Healthy donor T cells are potentially superior for engineered cellular therapy as compared to T cells from patients who have undergone prior chemotherapy or hematopoietic stem-cell transplant, which can damage or weaken T cells. In addition, greater consistency of the product may yield more predictable treatment outcomes.

- ***Streamlined Manufacturing and Cost Efficiencies***. We are building an efficient and scalable manufacturing process and organization. The allogeneic approach utilizes healthy donor T cells which we believe provides enhanced scalability, reduces costs of engineered T cell therapy and reduces costs to the healthcare system as our allogeneic approach does not require us to collect and track T cells from each individual patient.



Manufacturing Allogeneic T Cells

There are similarities as well as key differences between the processes for allogeneic and autologous T cell manufacturing, as illustrated in the figure below.



The three primary steps to creating our engineered allogeneic CAR T cells are: (1) collection and transduction, (2) gene editing, and (3) purification, formulation, and storage.

Step 1. Collection and Transduction

The starting material for our allogeneic T cell products is white blood cells from a healthy donor, which are collected using a standard blood bank procedure known as leukapheresis. The collected cells are then screened, tested, and shipped to a central processing facility, where the T cells are isolated and stored frozen, creating an inventory of starting healthy donor cells for manufacturing.

The manufacturing process starts by thawing frozen healthy donor T cells, which are then stimulated to proliferate and transduced with a viral vector to integrate the CAR sequence into the T cell genome. The CAR sequence directs the expression of CAR proteins on the cell surface that allows the transduced T cells to recognize and bind to a target molecule that is present on cancer cells.

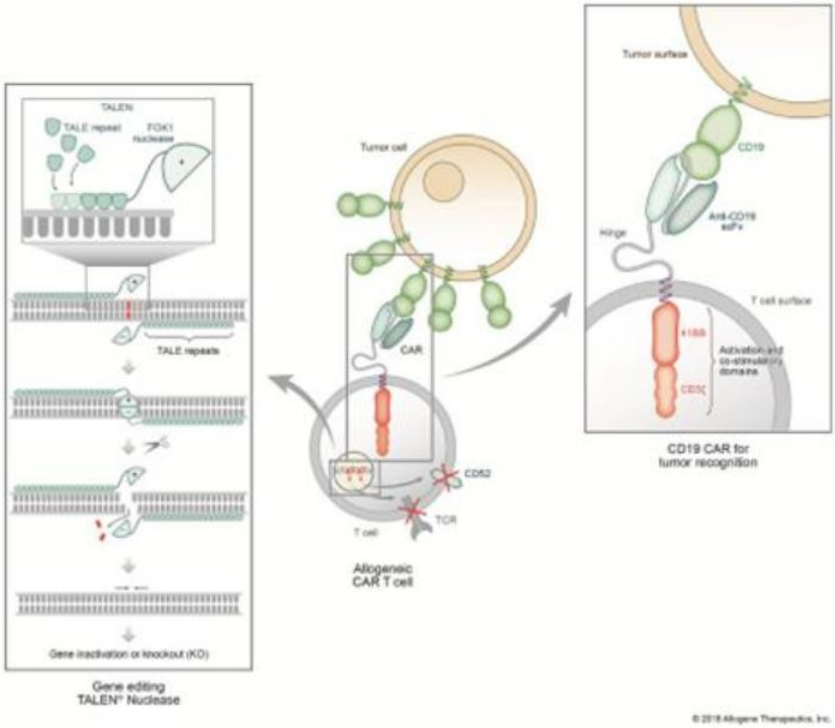
We can concurrently add additional genes to these cells that confer specific properties. For example, we can add an off-switch by expressing proteins that can make T cells susceptible to certain drugs, such as anti-CD20 monoclonal antibodies, and enable us to deplete our engineered T cells if needed by administering such drugs to the patient. We can also introduce cytokine activation signaling within a CAR T cell that is designed to enhance the proliferative potential, migratory behavior, and killing activity of cells. We are investigating multiple constructs designed to mimic cytokine signaling selectively within CAR T cells, a technology platform that we call “TurboCARs”.

Step 2. Gene Editing

Next, we use Cellectis's electroporation and TALEN technologies for gene editing of T cells. TALENs are a class of DNA cutting enzymes derived by fusing the DNA-cutting domain of a nuclease to the DNA-binding domains from transcription activator-like effectors (TALE). The TALE DNA-binding domain can be tailored to specifically recognize a unique DNA sequence. These fusion proteins serve as readily targetable "DNA scissors" for genome engineering applications that can enable targeted genome modifications.

Electroporation allows TALEN mRNA to enter into the cell, where it is translated into a nuclease that can cut DNA and inactivate specific target genes. Inactivation of genes, such as TCRα and CD52, is intended to reduce the risk of GvHD and allow the allogeneic T cells to expand and persist in patients. We believe the inactivation of other target genes using the TALEN technology can be incorporated into future product candidates, with the goal of enhancing T cell function, including increasing potency against solid tumors.

The figure below illustrates how we utilize Cellectis's TALEN and electroporation technology to inactivate the genes coding for TCRα and CD52 in our allogeneic T cells for UCART19.



We believe the key benefits of TALEN technology are:

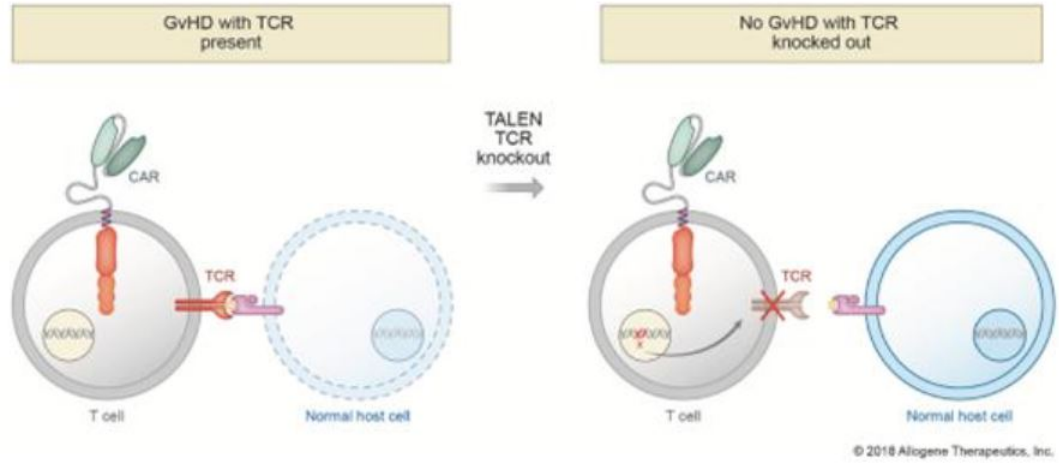
- *Precision*. It is possible to design a TALEN that will cleave at any selected region in any gene, giving us the ability to achieve the desired genetic outcome with any gene.

- *Specificity and Selectivity*. TALEN may be designed to limit its DNA cleavage to the desired sequence and to reduce the risk of cutting elsewhere in the genome. This parameter is essential, especially for therapeutic applications, because unwanted genomic modifications potentially could lead to harmful effects for the patient. In addition, gene editing requires only a transient presence of TALEN, thus preserving the integrity and functionality of the T cell's genome.

- *Efficiency*. A large percentage of cells treated by the nuclease bear the desired genomic modification after treatment is completed. We believe the efficiency of TALEN editing helps to improve our manufacturing yields.

TCRα knockout: Non-modified allogeneic T cells bear functional TCRs and, if injected into a patient, can potentially recognize the patient's tissue as foreign and damage it. This reaction, known as GvHD, is mediated by intact TCRs on allogeneic T cells. To reduce the risk of GvHD, all of our product candidates undergo the inactivation of a gene coding for TCRα, a key component of TCRs. The engineered T cells lacking functional TCRs are no longer capable of recognizing peptide

antigens presented on major histocompatibility complex proteins and thus incapable of attacking the patient's normal tissue. This could mitigate the risk of GvHD that can occur when allogeneic TCR-positive T cells are infused into patients who are unrelated to the healthy donor, as shown in the figure below.



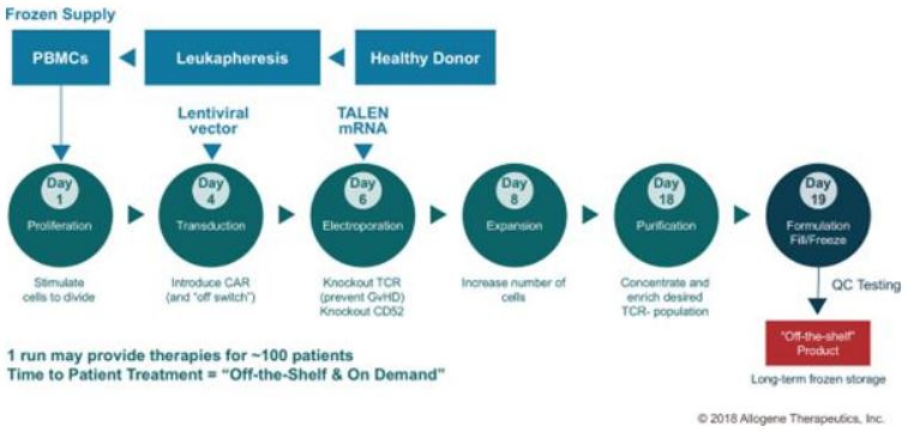
CD52 knockout: The patient's immune system is expected to recognize allogeneic T cells as foreign and destroy or reject them. To delay this rejection, we use anti-CD52 antibody to deplete lymphocytes, including T cells, in patients. Anti-CD52 antibody recognizes CD52 protein expressed on many immune cells, including T cells. CD52 protein is expressed in both donor and patient immune cells. To selectively deplete a patient's immune cells while sparing the therapeutic allogeneic T cells, we use TALEN gene editing to inactivate the CD52 gene in allogeneic T cells, thus protecting allogeneic T cells from the anti-CD52 antibody mediated depletion.

By administering anti-CD52 antibody prior to infusing our product candidates, we believe we can reduce the likelihood of a patient's immune system rejecting the engineered allogeneic T cells for a sufficient period of time to enable a window of persistence during which our engineered allogeneic T cells can expand and actively target and destroy cancer cells. We also believe our approach is unique and differentiated. To capitalize on this differentiation and to secure our own source of anti-CD52 monoclonal antibody, we are developing ALLO-647. We are currently utilizing ALLO-647 in all of our clinical trials.

Step 3. Purification, Formulation, and Storage

Once the allogeneic T cells have been engineered with CARs and gene edited to remove the genes encoding TCRα and CD52, they are cultured for several days to increase the cell number and then harvested. The allogeneic cells then undergo a purification step to remove residual TCR positive cells that have not undergone TCRα gene editing. We believe this purification step is essential as none of the currently available gene-editing nucleases is 100% efficient at inactivating the target genes. After overnight recovery, the cells are formulated in a cryopreservation media and filled into closed, stoppered vials prior to controlled-rate freezing and long-term storage in the vapor phase of liquid nitrogen. This inventory is securely stored and then shipped to oncology centers as needed.

The figure below illustrates the steps in a manufacturing run for our engineered allogeneic CAR T product candidates.



Product Pipeline and Development Strategy

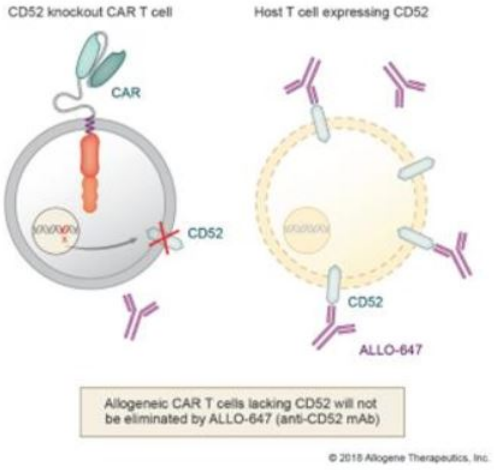
Using our proprietary allogeneic T cell platform, we are researching and developing multiple product candidates for the treatment of blood cancers and solid tumors. Our product candidates are allogeneic T cells engineered to be used as off-the-shelf treatments for any patient with a particular cancer type. Each product candidate targets a selected antigen expressed on tumor cells and bears specific engineered attributes.

Our product pipeline is represented in the diagram below:

CATEGORY		PROGRAM	PRE-CLINICAL	PHASE 1	PHASE 2/3[2]
Hematological Malignancies	CD19	ALLO-501 (NHL)[1]			
		ALLO-501A (NHL)[1]			
	BCMA	ALLO-715 (MM)			
		ALLO-715 + nirogacestat (MM)[3]			
		ALLO-605 (TurboCAR™/MM)			
		ALLO-316 (CD70/AML)			
		ALLO-819 (FLT3/AML)			
Solid Tumors		ALLO-316 (CD70/RCC)			
		DLL3 (SCLC)			
		10 Undisclosed Targets			
Lymphodepletion Agent		ALLO-647 (Anti-CD52 mAb)[4]			

[1] *Servier holds ex-US commercial rights.*
[2] *Phase 3 may not be required if Phase 2 is registrational.*
[3] *Allogene sponsored trial in combination with SpringWorks Therapeutics, Inc.*
[4] *ALLO-647 intended to enable expansion and persistence of allogeneic CAR T product candidates.*

In addition to our development of allogeneic CAR T cell product candidates, we are developing an anti-CD52 monoclonal antibody, ALLO-647, which is designed to be used prior to infusing our other product candidates as part of the lymphodepletion regimen. As illustrated below, we believe ALLO-647 can reduce the likelihood of a patient's immune system from rejecting the engineered allogeneic T cells for a sufficient period of time to enable a window of persistence during which our engineered allogeneic T cells can actively target and destroy cancer cells.



Anti-CD19 Development Program

CD19 is an antigen expressed on the surface of B cells, including on B cells that are malignant. B cells are considered non-essential tissue, as they are not required for patient survival. We believe CD19 is a validated target for the treatment of B cell leukemias and lymphomas. Multiple autologous anti-CD19 targeted CAR T therapies have shown promising results and have been approved by the FDA as therapies for adults with R/R large B-cell lymphoma, adults with R/R mantle cell lymphoma, and for children and young adults with ALL that is refractory or has relapsed at least twice.

Our first anti-CD19 product candidate, UCART19, was advanced with our partner, Servier, who led manufacturing and clinical development. UCART19 was manufactured to express a CAR that is designed to target CD19 and gene edited to lack TCRα and CD52 to minimize the risk of GvHD and enable a window of persistence in the patient. In addition, UCART19 cells were engineered to express a small protein on the cell surface called RQR8, which consists of two rituximab recognition domains. This allowed for recognition and elimination of cells in the event that silencing of CAR T cell activity is desired.

Servier sponsored two Phase 1 clinical trials of UCART19 in patients with R/R CD19 positive B-cell ALL, one for adult patients (the CALM trial) and one for pediatric patients (the PALL trial). The Servier-sponsored trials completed in 2020 and Servier determined that no new patients will be enrolled. All patients from both studies will continue the long-term follow-up as planned. We and Servier are reviewing our development strategy for ALL.

ALLO-501 and ALLO-501A are our other allogeneic CAR T cell product candidates targeting CD19, which are jointly developed by us and Servier. We are responsible for the manufacture of ALLO-501 and ALLO-501A. We also lead the clinical development program and are sponsoring the ALPHA trial of ALLO-501 and ALPHA2 trial of ALLO-501A, each for patients with R/R NHL.

ALLO-501 is identical to UCART19 in molecular design, however several modifications have been introduced by us to the manufacturing process for ALLO-501. These modifications are designed to facilitate more efficient manufacturing scale-up for the larger patient population targeted by ALLO-501. Like UCART19, ALLO-501 also co-expresses a small protein on the cell surface called RQR8, which consists of two rituximab recognition domains. This allows for destruction of the CAR T by rituximab.

Prior treatment with rituximab is typical for patients with NHL and, depending on the lag time between the rituximab administration and planned ALLO-501 infusion, prior administration of rituximab may interfere with ALLO-501. As a result, we have removed RQR8 in the next generation of ALLO-501, known as ALLO-501A. We believe ALLO-501A will have the potential to facilitate treatment of patients who were recently treated with rituximab. ALLO-501A has been manufactured from several donors under non-cGMP conditions and has been compared to the current version of ALLO-501 *in vitro.* In this study, we found that ALLO-501 and ALLO-501A exhibited similar characteristics and killing activity.

Lead Target Indications

Non-Hodgkin Lymphoma (NHL)

NHL is a hematologic cancer originating from malignant lymphocytes. It is the most common hematological malignancy in the United States, with 81,560 new cases estimated to be diagnosed and 20,720 deaths estimated in 2021, according to the American Cancer Society. Over 60 NHL subtypes have been identified, and each subtype represents different neoplastic lymphoid cells (T, B or NK cells) that have arrested at different stages of differentiation. The most common subtype is B-cell, which represented over 90% of all new NHL cases in 2016.

B-cell NHL itself represents a group of different neoplasms that not only differ in pathology, but also response to therapy and prognosis. NHL can be rapidly growing (aggressive) with short survival, such as large B-cell lymphomas, which include diffuse large B cell lymphoma (DLBCL), or it can be slow growing, or indolent, such as FL. Despite recent therapeutic advances, more than 50% of patients with aggressive B-cell NHL are incurable using existing approved therapies.

The R-CHOP chemotherapy combination (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone) introduced in the early 2000s remains the standard of care for newly diagnosed DLBCL, and five-year survival can be achieved for 55-60% of patients. Unfortunately, approximately 30% of DLBCL require second-line therapy, and subsequent therapy is dependent on whether the patients are candidates for high-dose therapy followed by autologous stem-cell therapy. A retrospective analysis of patients with R/R DLBCL, who were not treated with autologous CAR T therapy, found that outcomes in this population are poor, with an objective response rate of 26% (CR: 7%, partial response: 18%) and median overall survival of 6.3 months.

Despite availability of multiple active agents, high response rates, and long progression-free survival with first-line therapy, FL remains an incurable disease. Most patients treated today eventually relapse, and subsequent responses and durations of responses become increasingly shorter. Ultimately, patients become resistant to chemo-immunotherapy, clinically defined as relapsed within 12 months. In these patients, the toxicity commonly outweighs the benefit of treatment with chemotherapy. Therefore, there remains a high unmet medical need for newer treatment options, especially for those patients with cancer that is resistant to chemo-immunotherapy.

Acute Lymphoblastic Leukemia (ALL)

ALL is characterized by the proliferation of immature lymphocytes in the bone marrow. Approximately 5,690 new cases and 1,580 deaths in the United States are estimated in 2021, according to the American Cancer Society. Approximately 80% of cases of ALL are B-cell ALL.

The risk for developing ALL is highest in children younger than five years of age. From age five until the mid-20s, the risk declines slowly and begins to steadily rise again after age 50. Overall, about 40% of all cases of ALL are in adults. Though most cases occur in children, approximately 80% of deaths from ALL occur in adults.

Over the past four decades pediatric cure rates have reached greater than 80% in developed countries. This progress can be attributed, in part, to a deeper understanding of the molecular genetics and pathogenesis of the disease, advances in combination chemotherapy, monitoring of minimal residual disease, use of tyrosine kinase inhibitors for Philadelphia chromosome–positive ALL and the success of autologous CAR T cell therapies. Allogeneic stem-cell transplant (allo-SCT) offers the potential for cure in some individuals, however, the option is available only to approximately a third of patients due to the lack of compatible stem cell source, general health, or the high risk of complications. Furthermore, allo-SCT carries a high rate of treatment-related mortality which can occur in approximately 20-30% of patients undergoing allo-SCT. In patients with R/R ALL after two or more lines of therapy, the median disease-free survival is less than six months. The five-year overall survival in adults over the age of 60 is approximately 20%, highlighting the high unmet need despite the recent advances in the treatment of ALL.

Initial Phase 1 Results from the ALPHA Trial

In May 2020, in collaboration with Servier, we announced initial results from the ALPHA trial in R/R NHL at the ASCO annual meeting.

The ALPHA trial is a dose-escalation study for ALLO-501 with three separate dose cohorts, from 40×10^6 to 360×10^6 total cells. Prior to ALLO-501 treatment, all patients undergo lymphodepletion with a regimen of fludarabine, cyclophosphamide and a low dose or higher dose ALLO-647. As of the May 11, 2020 data cutoff, 23 patients were enrolled and 22 patients received ALLO-501. One patient was removed from the study prior to lymphodepletion due to acute renal failure from urinary obstruction. The median time from enrollment to the start of therapy was five days.

For the efficacy analysis, 19 out of 22 patients reached at least one month assessment as of the May 2020 data cutoff. Responses were observed across all cell doses and tumor histologies (DLBCL and FL) with an overall response rate (ORR) of 63% and complete response (CR) rate of 37%. Higher dose ALLO-647 was associated with a higher CR rate of 50%, deeper lymphodepletion and delayed host T cell recovery. With a median follow-up of 3.8 months, nine of the 12 responding patients (75%) remained in response as of the data cutoff.

Cell Dose and Lympho-depletion regimen	**39mg ALLO-647**				**90mg ALLO-647**			**All Patients (N=19) (95% CI)**
	40×10^6 CAR^+ cells (N=4)	120×10^6 CAR^+ cells (N=4)	360×10^6 CAR^+ cells (N=3)	**All 39mg ALLO-647 (N=11)**	120×10^6 CAR^+ cells (N=6)	360×10^6 CAR^+ cells (N=2)	**All 90mg ALLO-647 (N=8)**	
ORR, n (%)	3 (75%)	3 (75%)	1 (33%)	**7 (64%)**	4 (67%)	1(50%)	5 (63%)	**12/19 (63%)** (38%, 84%)
CR, n (%)	1 (25%)	1 (25%)	1 (33%)	**3 (27%)**	4 (67%)	0 (0%)	4 (50%)	**7/19 (37%)** (16%, 62%)

One of the ongoing responders is a patient with an initial partial response (PR) who progressed by month two. This patient achieved a CR after re-treatment with the same dose of ALLO-501 and a higher dose (90mg) of ALLO-647. This patient is reflected as a PR in the table above and not as a CR.

Included in the overall efficacy analysis are three patients who were refractory to prior autologous CAR T therapy (the best response of progressive disease or disease progression within three months). These patients were also refractory to allogeneic CAR T therapy. In CAR T naïve patients, the ORR was 75% and the CR rate was 44%.

	All Cell Doses + 39mg ALLO-647 (N=10)	120×10^6 and 360×10^6 CAR^+ cells + 90mg ALLO-647 (N=6)	**All CAR T Naïve Patients (N=16)**
ORR, n (%)	7 (70%)	5 (83%)	**12/16 (75%)** (48%, 93%)
CR, n (%)	3 (30%)	4 (67%)	**7/16 (44%)** (20%, 70%)

The table below summarizes the adverse events by grade as of the data cutoff. Grade 1 represents mild toxicity, Grade 2 represents moderate toxicity, Grade 3 represents severe toxicity and Grade 4 represents life threatening toxicity. Grade 5 toxicity represents toxicity resulting in death. No dose limiting toxicities, graft-vs-host disease, or Immune Effector Cell-Associated Neurotoxicity Syndrome (ICANS) was observed.

Adverse Events of Interest	**Grade 1 N (%)**	**Grade 2 N (%)**	**Grade 3 N (%)**	**Grade 4 N (%)**	**Grade 5 N (%)**
Cytokine Release Syndrome	2 (9%)	4 (18%)	1 (5%)	—	—
ICANS	—	—	—	—	—
Graft-versus-Host Disease	—	—	—	—	—
Infection	5 (23%)	4 (18%)	2 (9%)	—	—
Infusion Reaction	1 (5%)	9 (41%)	1 (5%)	—	—
Neutropenia	—	1 (5%)	7 (32%)	7 (32%)	—

Cytokine release syndrome (CRS) occurred in 32% of the patients, was mainly mild to moderate in severity, manageable with standard recommendations, and all events resolved within a maximum of seven days.

Four patients (18%) experienced serious adverse events (SAEs). An SAE is defined as any untoward medical occurrence at any dose that (i) results in death; (ii) is life-threatening (immediate risk of death); (iii) requires inpatient hospitalization or prolongation of existing hospitalization; (iv) results in persistent or significant disability/incapacity (substantial disruption of the ability to conduct normal life functions); (v) results in congenital anomaly/birth defect; or (vi) is considered to be an important medical event. One patient had Grade 2 pyrexia and Grade 2 cytomegalovirus (CMV) reactivation which resolved in two days and six days, respectively. One patient had Grade 3 rotavirus infection and Grade 3 hypokalemia which resolved in 15 days and two days, respectively. One patient had Grade 3 febrile neutropenia and Grade 3 hypotension which each resolved in two days. One patient had a Grade 3 upper GI hemorrhage which resolved in one day and Grade 3 CMV reactivation which resolved in 25 days.

Adverse events were observed across all dose levels of ALLO-501 and ALLO-647. SAEs were observed at ALLO-501 cell dose level 40 x 10^6 and 120 x 10^6 and at both dose levels of ALLO-647.

Clinical Development Plan

The ALPHA trial is an open-label, Phase 1, single arm, multicenter clinical trial evaluating the safety and tolerability of ALLO-501 in adult patients with R/R large B-cell lymphoma, including DLBCL, or FL. Cell kinetics and pharmacodynamics of ALLO-501 will be evaluated as secondary and exploratory objectives, respectively. We are exploring the optimal dose and schedule of ALLO-501 and the lymphodepletion regimen in additional cohorts, which includes a cohort of patients receiving a consolidation of ALLO-501 doses. The consolidation consists of two infusions of 120 million CAR T cells, with a first infusion following the lymphodepletion regimen of fludarabine, cyclophosphamide and ALLO-647 and an initial tumor assessment performed at day 28. If a patient is in complete response, partial response or stable disease at day 28, a second infusion is given approximately five to six weeks after the first infusion. Prior to the second cell infusion, a patient will be eligible to receive a modified lymphodepletion consisting only of ALLO-647. We expect to report updated data from the ALPHA trial in the second quarter of 2021.

In the second quarter of 2020, we initiated ALPHA2, which is an open-label, Phase 1/2, single arm, multicenter clinical trial evaluating the safety and efficacy of ALLO-501A in adult patients with R/R large B-cell lymphoma, including DLBCL, or transformed FL. Cell kinetics and pharmacodynamics of ALLO-501A will be evaluated as secondary and exploratory objectives, respectively. The Phase 1 portion of the ALPHA2 trial is designed to assess the safety and tolerability at increasing dose levels of ALLO-501A and consolidation of ALLO-501A dosing, in order to identify the recommended doses and schedule of ALLO-501A and the lymphodepletion regimen for use in the Phase 2 portion of the trial. We expect to report initial data from the ALPHA2 trial in the second quarter of 2021. Subject to the data as well as follow-up data from ALPHA and ALPHA2 expected in the second half of 2021, we plan to proceed to the Phase 2 portion of the trial in adult patients with R/R large B-cell lymphoma, including DLBCL, or transformed FL by the end of 2021.

All patients treated with ALLO-501 and ALLO-501A will be followed in a long-term follow-up study.

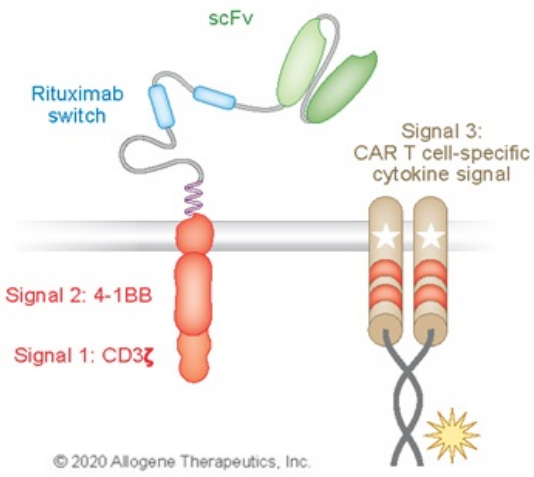
Anti-BCMA Development Program

BCMA is a member of the tumor necrosis factor receptor family and is selectively expressed on immunoglobulin-producing plasma cells, including malignant plasma cells (myeloma cells). We believe BCMA is an appropriate target for the treatment of multiple myeloma. Two autologous anti-BCMA targeted CAR T therapies have shown promising results in clinical trials and the sponsors have submitted the therapies to the FDA for approval for the treatment of adult patients with multiple myeloma who have received at least three prior therapies.

We are currently advancing a three-part strategy for the treatment of multiple myeloma. First, we are advancing ALLO-715, an anti-BCMA allogeneic CAR T cell product candidate. ALLO-715 is manufactured to express a CAR that is designed to target BCMA and gene edited to lack TCRα and CD52 to minimize the risk of GvHD and enable a window of persistence in the patient. In addition, rituximab recognition domains, as an off-switch, have been incorporated in between the scFv and the linker domain.

Second, as part of the ongoing Phase 1 clinical trial (the UNIVERSAL trial) of ALLO-715 in adult patients with R/R multiple myeloma, we are assessing the combination of ALLO-715 with SpringWorks Therapeutics, Inc.'s investigational gamma secretase inhibitor, nirogacestat. Gamma secretase inhibition prevents the cleavage and shedding of BCMA from the surface of myeloma cells. In preclinical models, nirogacestat has been shown to increase the cell surface density of BCMA and reduce levels of soluble BCMA, thereby enhancing the activity of BCMA-targeted therapies. In addition, emerging clinical data suggest that a gamma secretase inhibitor may increase anti-tumor efficacy of BCMA-targeted autologous CAR T therapy in patients with R/R multiple myeloma.

Third, we are progressing our next-generation version of ALLO-715, known as ALLO-605, that incorporates our TurboCAR technology to allow cytokine signaling to be engineered selectively into CAR T cells. TurboCARs have shown the ability to improve the potency and persistence of the CAR T cells and to prevent and delay exhaustion of the CAR T cells in preclinical models. ALLO-605 uses a constitutive cytokine signaling domain and a rituximab-mediated off-switch, as illustrated below. We expect to submit an IND in the first half of 2021 to initiate a Phase 1 clinical trial of ALLO-605.



Target Indication: Multiple Myeloma

Multiple myeloma is a hematological malignancy that is characterized by uncontrolled expansion of bone marrow plasma cells. There will be an estimated 34,920 new cases of multiple myeloma and 12,410 deaths from multiple myeloma in 2021 in the United States according to the American Cancer Society. Multiple myeloma predominantly affects the elderly, with 14 times more patients diagnosed at age 65 and over than those diagnosed under the age of 65.

For patients less than age of 70 with no comorbidities, autologous stem cell therapy is the preferred option to provide a durable response. For transplant ineligible patients, immunomodulatory drugs (Revlimid, Pomalyst, Thalomid) and proteasome inhibitors (Velcade, Kyrprolis, Ninlaro), often used in combination with one another, have displaced older cytotoxic agents as the mainstay of treatment. More recently, several new drugs with novel mechanisms (Darzalex, Empliciti, Farydak, Xpovio) have been approved for multiple myeloma, however none of these novel treatments is considered as curative.

Despite the introduction of newer therapies, a majority of patients are expected to relapse and the unmet need in patients with R/R myeloma remains high. In clinical trials, only 3% of patients who were previously treated with at least three lines of therapy (including proteasome inhibitors and immunomodulatory drugs), or who were refractory to both proteasome inhibitors and immunomodulatory drugs, achieved a CR to Darzalex, a CD38-directed monoclonal antibody. Median survival in such patients was just 17.5 months. Trials of autologous CAR T cell therapies have shown significant promise in multiple myeloma with reported CR rates that are substantially higher.

Initial Phase 1 Results from the UNIVERSAL Trial

In December 2020, we announced initial results from the UNIVERSAL trial in R/R multiple myeloma at the ASH annual meeting.

As of the October 30, 2020 data cutoff, 35 patients were enrolled with 31 patients evaluable for safety and 26 patients evaluable for efficacy. Patients were refractory to their last line of myeloma therapy, had a median of five prior lines of therapy, and 94% were penta-exposed, which means the patient had previously received at least one CD38 monoclonal antibody, two proteosome inhibitors and two immunomodulatory drugs. Four patients became ineligible for treatment due to rapidly progressing disease. The median time from enrollment to the start of therapy was five days.

In the initial dose escalation phase of the UNIVERSAL trial, patients received lymphodepletion followed by ALLO-715 at one of three dose levels (DL1 = 40M cells, DL2 = 160M cells, DL3 = 320M cells) in a 3+3 dose escalation design. DL4 (480M cells) was added in a subsequent cohort. Two lymphodepletion regimens were evaluated, with the trial enrollment primarily focused on the FCA lymphodepletion regimen:

- FCA: **F**ludarabine 90 mg/m^2, **C**yclophosphamide 900 mg/m^2, and **A**LLO-647 from 39 to 90mg divided over three days; and
- CA: **C**yclophosphamide 900 mg/m^2 and **A**LLO-647 39mg divided over three days.

Higher CAR T cell doses were associated with an increased response rate and greater cell expansion. In the DL3 cohort (320M CAR T+ cells), the ORR was 60% with 40% of patients achieving a very good partial response (VGPR) or better (VGPR+). VGPR+ is defined as a stringent complete response, complete response or VGPR. Across all cohorts and lymphodepletion regimens, six patients achieved VGPR+, five of whom were in the FCA lymphodepletion regimen. Minimal residual disease (MRD) assessment was completed in five of the six patients with a VGPR+ response and all achieved an MRD negative status. MRD negative status occurs when a patient achieves a CR and there is no evidence of tumor cells in the marrow when using sensitive tests such as polymerase chain reaction or flow cytometry.

As of the data cutoff, the overall median follow-up for efficacy was 3.2 months and six out of the nine patients treated with DL3 or DL4 with a response remain in response. The longest response was ongoing at six months from the DL3 cohort with FCA lymphodepletion.

Cell Dose and LD regimen	**FCA**						**CA**	
	DL1 40 x 10^6 CAR+ cells	DL2 160 x 10^6 CAR+ cells	**DL3 320 x 10^6 CAR+ cells**			DL4 480 x 10^6 CAR+ cells	**DL2 160 x 10^6 CAR+ cells**	DL3 320 x 10^6 CAR+ cells
	Low ALLO-647 (N=3)	Low ALLO-647 (N=4)	Low ALLO-647 (N=6)	High ALLO-647 (N=4)	**ALL ALLO-647 (N=10)**	Low ALLO-647 (N=3)	Low ALLO-647 (N=3)	Low ALLO-647 (N=3)
ORR*, n (%)	—	2 (50%)	3 (50%)	3 (75%)	**6 (60%)**	1 (33%)	—	2 (67%)
VGPR+ Rate*, n (%)	—	1 (25%)	3 (50%)	1 (25%)	**4 (40%)**	—	—	1 (33%)

*Responses included two subjects with only day 14 assessment and one subject who converted from a confirmed PR to VGPR (pending confirmation).

Of the 31 patients evaluable for safety, there was no graft-vs-host disease or ICANS observed. Grade 1 and Grade 2 CRS was reported in 14 patients (45%) and was manageable with standard therapies. Infection events ≥ Grade 3 in the trial was similar to what has been reported in other advanced multiple myeloma studies. Adverse events ≥ Grade 3 reported as SAEs occurred in 19% of patients. As previously reported, a single Grade 5 event related to progressive myeloma and conditioning regimen occurred in the CA cohort.

Adverse Events of Interest	**Grade 1 N (%)**	**Grade 2 N (%)**	**Grade 3 N (%)**	**Grade 4 N (%)**	**Grade 5 N (%)**	**All Grades N (%)**
Cytokine Release Syndrome	5 (16%)	9 (29%)	—	—	—	14 (45%)
ICANS	—	—	—	—	—	—
Graft-versus-Host Disease	—	—	—	—	—	—
Infection	2 (7%)	6 (19%)	4 (13%)	—	1 (3%)	13 (42%)
Infusion Reaction to ALLO-647	4 (13%)	3 (10%)	—	—	—	7 (23%)

Clinical Development Plan

The UNIVERSAL trial is an open-label, Phase 1, single arm, multicenter clinical trial evaluating the safety and tolerability of ALLO-715 in adult patients with R/R multiple myeloma. The safety of ALLO-647, cell kinetics, pharmacodynamics, and efficacy will be evaluated as secondary objectives. We are exploring the optimal dose and schedule of

ALLO-715 and the lymphodepletion regimen. We expect to report updated data from the UNIVERSAL trial in the fourth quarter of 2021.

The UNIVERSAL trial recently initiated the evaluation of ALLO-715 in combination with nirogacestat. Prior to ALLO-715 and nirogacestat treatment, all patients will undergo lymphodepletion with a regimen of fludarabine, cyclophosphamide and ALLO-647. The combination cohort will assess the safety and tolerability of ALLO-715 in combination with nirogacestat. The preliminary anti-tumor activity of the combination, cell kinetics, pharmacokinetics and host immune cell depletion/reconstitution will be evaluated as secondary objectives.

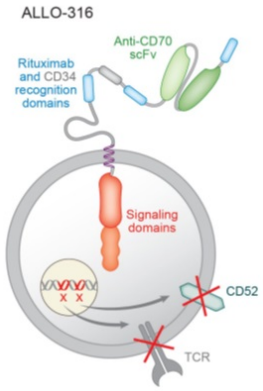
We expect to submit an IND in the first half of 2021 to initiate a Phase 1 clinical trial of our first TurboCAR candidate, ALLO-605, in adult patients with R/R multiple myeloma. The ALLO-605 trial will assess the safety and tolerability of increasing doses of ALLO-605 along with its clinical efficacy. The preliminary anti-tumor activity, cell kinetics, safety and tolerability of ALLO-647 in combination with fludarabine and cyclophosphamide, and patient reported outcomes will be evaluated as secondary objectives.

Anti-CD70 Development Program

CD70 is an antigen selectively expressed on several types of cancer cells, including on approximately 80-100% of ccRCC cells and 95% of AML cells, with limited off-tumor expression. CD70 is also expressed on a portion of DLBCL, multiple myeloma, chronic lymphocytic leukemia and glioblastoma cells as well as on activated T cells. Accordingly, we believe progressing allogeneic CAR T cell therapies directed against CD70 could be promising in solid tumor indications as well as hematological malignancies.

In December 2020, the FDA cleared an IND to initiate a Phase 1 clinical trial (the TRAVERSE trial) of ALLO-316 in adult patients with advanced or metastatic ccRCC. We plan to initiate the TRAVERSE trial in the first quarter of 2021. We also plan to investigate the use of ALLO-316 for a second indication in R/R AML. While CD70 can be expressed on activated T cells, ALLO-316 was associated with minimal or no fratricide in preclinical studies, meaning that ALLO-316 cells did not mediate the targeted killing of other ALLO-316 cells.

ALLO-316 is manufactured to express a CAR that is designed to target CD70 and gene edited to lack TCRα and CD52 to minimize the risk of GvHD and enable a window of persistence in the patient. In addition, rituximab and CD34 recognition domains have been incorporated in between the scFv and the linker domain, as illustrated below. The rituximab recognition domains allow elimination of cells with rituximab in the event that silencing of CAR T cell activity is desired. The CD34 domain confers recognition by an anti-CD34 antibody, and may be used as a surface marker to monitor ALLO-316 in patients by flow cytometry.



Lead Target Indications:

Clear Cell Renal Cell Carcinoma

ccRCC is the most common subtype of renal cancer. Approximately 76,080 new cases of renal cell carcinoma are estimated to be diagnosed in the United States and 13,780 deaths are estimated in 2021, according to the American Cancer Society. The five-year survival rate for patients with early-stage disease is greater than 90% compared with less than 15% for those with advanced kidney cancer.

Systemic therapy (including immunotherapy and molecularly targeted agents), surgery, and radiation therapy all may have a role in the treatment paradigm depending on the extent of disease, sites of involvement, and patient-specific factors. While vascular endothelial growth factor (VEGF)-directed therapies (e.g. sunitinib) represented a first-line standard for over a decade, these therapies have been quickly supplanted by combination therapies incorporating PD-1 immune-checkpoint inhibition as the backbone.

The combination of VEGF and immune check-point inhibitors, such as axitinib and pembrolizumab, are often used in the first line setting and has shown a median progression-free survival of 15.1 months with an ORR of 59.3% and CR rate of 5.8%. Patients who progress on immune checkpoint-based combination therapies can be treated with cabozantinib, pazopanip, temsirolimus or high dose IL-2. There remains a need for novel, mechanistically distinct therapies.

Acute Myeloid Leukemia

AML is a cancer of bone marrow stem cells and is the most common type of acute leukemia in adults. The American Cancer Society estimated 19,940 new diagnoses and 11,180 deaths in the United States in 2020. Although advances in supportive care and prognostic risk stratification have optimized established therapies, overall long-term survival remains poor and AML is a high unmet medical need. Patients have a poor prognosis despite improvements in chemotherapy regimens and supportive care.

AML is a biologically and clinically heterogenous disease. The identification of recurrent genetic mutations, such as FLT3-ITD, NMP1 and CEBPA, has helped refine individual prognosis and guide management. Despite advances in supportive care, the backbone of therapy remains a combination of cytarabine- and anthracycline-based regimens with allogeneic stem cell transplantation for the medically-fit patients. Twenty to 30 percent of young adult patients and 50 percent of older adults with newly diagnosed AML will fail to attain a CR with intensive induction chemotherapy due to drug resistance or death. In addition, a percentage of patients who initially attain a CR will relapse. Relapse after conventional chemotherapy remains a major problem in patients with myeloid malignancies such as AML, and the major cause of death after diagnosis of AML is from relapsed disease. The development of new treatments, in concert with improved genetic profiling and risk stratification, are greatly needed in the goal to achieve incremental gains in remission and survival.

Clinical Development Plan

The TRAVERSE trial is an open-label, Phase 1, single arm, multicenter clinical trial evaluating the safety and tolerability of ALLO-316 in adult patients with advanced or metastatic ccRCC. Anti-tumor activity, cell kinetics, pharmacodynamics, and correlation of outcome with tumor CD70 expression will be evaluated as secondary objectives. The trial is a dose-escalation study for ALLO-316 with four separate dose cohorts, from 40×10^6 to 480×10^6 total cells. Prior to ALLO-316 treatment, all patients will undergo lymphodepletion with a regimen of fludarabine, cyclophosphamide and ALLO-647. We expect to initiate the TRAVERSE trial in the first quarter of 2021.

Future Opportunities

Moving forward, we plan to utilize our allogeneic platform to pursue additional targets of interest. These include the additional targets currently in our pipeline as well as other targets that might be validated in the future. For example, we are developing allogeneic CAR T cell product candidates targeting FLT3 for the treatment of AML (ALLO-819) and DLL3 for the treatment of small cell lung cancer (SCLC).

- ***Acute Myeloid Leukemia and FLT3***. FLT3 is a receptor tyrosine kinase that is overactive in AML blasts. We have conducted *in vitro* and *in vivo* studies of our anti-FLT3 CAR T candidate, ALLO-819, that show anti-tumor activity against blasts present in bone marrow from AML patients and in mice. We are currently testing increasing activity of our clinical candidate with the addition of a TurboCAR cytokine signaling domain ahead of finalizing an IND-enabling data set.

- ***Small Cell Lung Cancer and DLL3***. DLL3 is a target which is being pursued for SCLC using antibody drug conjugates, bi-specifics and autologous CAR T therapies. According to the American Cancer Society, approximately 235,760 new cases of lung cancer are expected to be diagnosed in the United States in 2021 and SCLC comprises approximately 10-15% of all lung cancers. SCLC is responsive to chemotherapy, but recurrence arises rapidly, with less than 7% of patients surviving over five years. SCLC has shown to be responsive to immunotherapy with approximately one-third of patients responding to PD-1/PD-L1 therapy and achieving a median overall survival of approximately thirteen months for patients who received PD-L1 and platinum-based chemotherapy. We believe an allogeneic anti-DLL3 CAR T cell product candidate could be used alone or in combination with PD-1/PD-L1 therapy.

We are currently testing and refining constructs for an anti-DLL3 CAR T candidate and investigating the use of TurboCARs and next generation TurboCARs designed to overcome negative effects of the tumor microenvironment. Following completion of these studies, we plan to progress to IND-enabling studies.

We also plan to investigate the potential to enhance our platform using next-generation technologies such as TurboCARs, renewable cell sources, site-specific integration, multi-specific CARs and other technology related to enhancing specificity and avoiding immune rejection.

- ***TurboCARs***. Mimicking cytokine signaling within a CAR T cell could enhance the proliferative potential, migratory behavior, activation status and killing activity of cells. Such modulation may enhance the anti-tumor activity and durability of CAR T cells without affecting non-engineered immune cells. We believe TurboCARs may also allow for reduced CAR T cell dose requirements and greater impact in overcoming exhaustion in solid tumor environments. We are investigating multiple constructs designed to mimic cytokine signaling selectively within CAR T cells, a technology platform that we call "TurboCARs". We are progressing our first TurboCAR, ALLO-605, which targets BCMA and uses a constitutive cytokine signaling domain and a rituximab-mediated off-switch. We plan to submit an IND to initiate a Phase 1 clinical trial of ALLO-605 in the first half of 2021.

- ***Renewable Cell Source.*** In November 2019, we entered into a Collaboration and License Agreement with Notch (the Notch Collaboration Agreement), pursuant to which Notch has granted to us an exclusive, worldwide, royalty-bearing, license to certain Notch intellectual property to develop and commercialize gene-edited T cell and/or natural killer cell products from iPSCs directed at certain CAR targets for initial application in NHL, ALL and multiple myeloma. We believe iPSCs may provide renewable starting material for our allogeneic CAR T cell product candidates that could allow for improved efficiency of gene editing, greater scalability of supply, product homogeneity and more streamlined manufacturing. We commenced the research collaboration with Notch in 2019.

- ***Site-Specific Integration***. Using a combination of gene-editing technology and homologous recombination technology we can potentially integrate the CAR expressing DNA into specific target genes within the T cell DNA. Such site-specific integration may allow the CAR or other transgenes to be introduced into T cells in a more homogeneous manner, allowing a more uniform and controlled expression of the proteins, with the goal of generating CAR T cell products that behave in a more consistent and predictable manner.

- ***Multi-specific CARs***. We are investigating the utility of a single cell product targeting multiple antigens. This may be accomplished by including two antigen binding domains with different specificity in a single polypeptide encoding the CAR or in two separate polypeptides each encoding a CAR with different antigen specificity.

- ***Increasing tumor specificity of targets:*** We are investigating technology to localize activity of an allogeneic CAR T cell to the tumor microenvironment in an effort to extend specificity and therefore safety of CAR T cells. We believe this approach may be particularly promising for solid tumor targets that are associated with normal tissue toxicities.

- ***Next-generation anti-rejection technology:*** We are investigating additional ways, beyond our existing anti-CD52 antibody technology, to prevent patient immune rejection of our allogeneic CAR T cells. We are exploring ways to engineer allogeneic CAR T cells to escape detection from the patient immune system. We are also exploring engineering allogeneic CAR T cells with mechanisms to attack certain patient immune cells that would otherwise lead to rejection. For instance, we are exploring allo-immune defense receptor technology licensed from the Baylor College of Medicine. This technology is designed to recognize and destroy allo-reactive host immune cells that would otherwise be capable of rejecting the allogeneic CAR T cells, which could provide enhanced persistence of the allogeneic CAR T cells.

In addition, we continually survey the scientific and industry landscape for opportunities to license, partner or acquire technologies that may help us advance current or new T cell therapies for the benefit of patients.

Our Manufacturing Strategy

We have invested resources to optimize our manufacturing process, including the development of improved analytical methods and instrumentation. We plan to continue to invest in process science, product characterization and manufacturing to continuously improve our production and supply chain capabilities over time.

Our product candidates are designed and manufactured via a platform comprised of defined unit operations and technologies. The process is gradually developed from small to larger scales, incorporating compliant procedures to create cGMP conditions. Although we have a platform-based manufacturing model, each product is unique and for each new product candidate, a developmental phase is necessary to individually customize each engineering step and to create a robust procedure that can later be implemented in a cGMP environment to ensure the production of clinical batches. This work is performed in our research and development environment to evaluate and assess variability in each step of the process in order to define the most reliable production conditions.

Our cell-based product candidates are currently manufactured in the United States by a CMO, and we manage all other aspects of the supply, including planning, CMO oversight, disposition and distribution logistics. The CMO that is manufacturing our clinical supply is subject to cGMP requirements, using qualified equipment and materials. We also utilize separate third party contractors to manufacture cGMP raw materials that are used for the manufacturing of our product candidates, such as viral vectors that are used to deliver the applicable CAR gene into the T cells. We believe all materials and components utilized in the production of the cell line, viral vector and final T cell product are available from qualified suppliers and suitable for pivotal process development in readiness for registration and commercialization.

In addition, in February 2019, we entered into a lease for approximately 118,000 square feet to develop a state-of-the-art cell therapy manufacturing facility in Newark, California. We are phasing the build-out of the facility, and completed the build-out of the majority of the facility at the end of 2020. We expect to initiate cGMP manufacturing operations in 2021. However, we expect to continue to rely on our CMO and may rely on CMOs and other third parties for the manufacturing and processing of our product candidates in the future. We also utilize a CMO in the United States for the manufacture and supply of ALLO-647 and we plan to continue to rely on the CMO for future production of ALLO-647. We believe the use of contract manufacturing and testing for our first clinical product candidates has allowed us to rapidly prepare for clinical trials in accordance with our development plans. We expect third-party manufacturers will be capable of providing and processing sufficient quantities of our product candidates to meet anticipated clinical trial demands.

We plan to create a robust supply chain with redundant sources of supply comprised of both internal and external infrastructure.

Strategic Agreements

On December 14, 2020, we entered into a License Agreement with Allogene Overland Biopharm (CY) Limited, a joint venture established by us and Overland Pharmaceuticals (CY) Inc., pursuant to a Share Purchase Agreement, dated December 14, 2020, for the purpose of developing, manufacturing and commercializing allogeneic CAR T cell therapies for patients in greater China, Taiwan, South Korea and Singapore.

We have also entered into multiple additional strategic agreements and collaborations, including an Asset Contribution Agreement with Pfizer (the Pfizer Agreement), a License Agreement with Cellectis (the Cellectis Agreement), an Exclusive License and Collaboration Agreement with Servier (the Servier Agreement), and the Notch Collaboration Agreement

For additional information regarding our significant agreements, see Note 7 to our consolidated financial statements appearing elsewhere in this Annual Report.

Intellectual Property

Our commercial success depends in part on our ability to obtain and maintain proprietary protection for our product candidates, as well as novel discoveries, product development technologies, and know-how. Our commercial success also depends in part on our ability to operate without infringing on the proprietary rights of others and to prevent others from infringing our proprietary rights. Our policy is to develop and maintain protection of our proprietary position by, among other methods, filing or in-licensing U.S. and foreign patents and applications related to our technology, inventions, and improvements that are important to the development and implementation of our business.

We also rely on trademarks, trade secrets, know-how, continuing technological innovation, confidentiality agreements, and invention assignment agreements to develop and maintain our proprietary position. The confidentiality agreements are designed to protect our proprietary information and the invention assignment agreements are designed to grant us ownership of technologies that are developed for us by our employees, consultants, or other third parties. We seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in our agreements and security measures, either may be breached, and we may not have adequate remedies. In addition, our trade secrets may otherwise become known or independently discovered by competitors.

With respect to both licensed and company-owned intellectual property, we cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our commercial products and methods of using and manufacturing the same.

We are actively building our intellectual property portfolio around our product candidates and our discovery programs, based on our own intellectual property as well as licensed intellectual property. Following the execution of the Pfizer Agreement, we are the owners of, co-owners of, or the licensee of multiple patents and patent applications in the United States and worldwide. These licensed assets include rights to the Cellectis TALEN gene-editing technology to engineer T cells that lack functional TCRs and to inactivate the CD52 gene in donor cells. We have exclusive worldwide rights to these patents for certain antigen targets, including BCMA, CD70, FLT3 and DLL3, and have U.S. rights to these patents for CD19. We also have rights to a Cellectis U.S. patent for technology covering an engineered T cell therapy combining CD52 gene knockout in combination with an anti-CD52 antibody for certain products directed against certain antigen targets. Our patent rights are composed of patents and pending patent applications that are solely owned by us, co-owned with Servier, co-owned with Cellectis, exclusively licensed from Pfizer, exclusively licensed from Servier, or exclusively licensed from Cellectis.

Our patent portfolio includes protection for our lead product candidates, ALLO-501, ALLO-501A and ALLO-715, as well as our other research-stage candidates. With respect to ALLO-501 and ALLO-501A, we have an exclusive license from Servier in the United States to patent rights covering composition of matter and methods of making and use covering ALLO-501 and ALLO-501A. With respect to ALLO-715, we have an exclusive license from Pfizer to patent rights covering ALLO-715 in the United States and in foreign jurisdictions. These rights include composition of matter protection for ALLO-715 and methods of making and using ALLO-715. More generally, our patent portfolio and filing strategy is designed to provide multiple layers of protection by pursuing claims directed toward: (1) antigen binding domains directed to the targets of our product candidates; (2) CAR constructs used in our product candidates; (3) methods of treatment for therapeutic indications; (4) manufacturing processes, preconditioning methods, and dosing regimens; and (5) reducing GvHD, and methods for genetically engineering immune cells suitable for allogeneic use.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the date of filing of the first non-provisional application to which priority is claimed. In the United States, patent term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the United States Patent and Trademark Office in granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier-filed patent. In the United States, the term of a patent that covers an FDA-approved drug may also be eligible for a patent term extension of up to five years under the Hatch-Waxman Act, which is designed to compensate for the patent term lost during the FDA regulatory review process. The length of the patent term extension involves a complex calculation based on the length of time it takes for regulatory review. A patent term extension under the Hatch-Waxman Act cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent applicable to an approved drug may be extended. Moreover, a patent can only be extended once, and thus, if a single patent is applicable to multiple products, it can only be extended based on one product. Similar provisions are available in Europe and certain other foreign jurisdictions to extend the term of a patent that covers an approved drug.

Competition

If successfully developed, our products will compete with novel therapies developed by biopharmaceutical companies, academic research institutions, governmental agencies and public and private research institutions, in addition to standard of care treatments. Due to the promising therapeutic effect of T cell therapies in clinical trials, we anticipate increasing competition from existing and new T cell products, including products that are both autologous and allogeneic in nature. We also anticipate competition from other cell-based and immune-based therapies in development.

Autologous T cell therapies directed at CD19 have been successfully developed by Novartis, Kite and Bristol-Myers Squibb Company (BMS). In August 2017, Novartis obtained FDA approval to commercialize Kymriah for the treatment of children and young adults with B-cell ALL that is refractory or has relapsed at least twice. In May 2018, Kymriah received FDA approval for adults with R/R large B-cell lymphoma. In October 2017, Kite obtained FDA approval to commercialize Yescarta, for the treatment of adult patients with R/R large B-cell lymphoma. A supplemental BLA for Yescarta for R/R FL and R/R marginal zone lymphoma was submitted in September 2020. Kite has also received FDA approval for a second autologous CD19-directed T cell therapy, Tecartus, for use in R/R mantle cell lymphoma. In February 2021, BMS obtained FDA approval for its anti-CD19 autologous T cell therapy, Breyanzi (lisocabtagene maraleucel), for the treatment of adults with certain types of large B-cell lymphoma who have not responded to, or who have relapsed after, at least two other types of systemic treatment.

BMS and bluebird bio, Inc. have submitted a BLA to the FDA for approval of an anti-BCMA autologous T cell therapy, idecabtagene vicleucel, for the treatment of adult patients with multiple myeloma who have received at least three prior therapies. In addition, Johnson & Johnson and partner Legend Bio have initiated a rolling BLA submission for an anti-BCMA autologous T cell therapy, ciltacabtagene autoleucel, for the same indication.

Autologous T cell therapies are being developed by a number of additional companies, including but not limited to Adaptimmune Therapeutics PLC, ArsenalBio, Autolus Therapeutics plc, Gilead Sciences, Inc., Gracell Biotechnologies Inc., Iovance Biotherapeutics, Inc., Mustang Bio, Inc., Novartis International AG, Pact Pharma, Inc., TCR² Therapeutics Inc., Tmunity Therapeutics, Inc., and Unum Therapeutics Inc.

Allogeneic T cell therapies have yet to receive FDA approval though the number of companies developing allogeneic product candidates has expanded greatly in recent years. This includes Atara Biotherapeutics, Inc., Caribou Biosciences, Inc., Celyad S.A., CRISPR Therapeutics AG, Editas Medicine, Inc., Gilead Sciences, Inc., Intellia Therapeutics, Inc., Poseida Therapeutics, Inc., Precision Biosciences, Inc., Sana Biotechnology, Inc., and Tessa Therapeutics Ltd. Additionally, Cellectis has several fully-owned allogeneic CAR programs that could compete with programs that fall outside our agreement with Cellectis.

There are also cell therapies under development that are based upon cell types other than the common type of T cells used by us and known as alpha/beta T cells. These include product candidates derived from natural killer cells, natural killer T cells, and gamma/delta T cells. Companies developing such therapies include Fortress Biotech, Inc., Gamida Cell Ltd., GammaDelta Therapeutics Limited, Fate Therapeutics, Inc., In8bio, Inc., Kuur Therapeutics Inc., Lyell Immunopharma, Inc., Nkarta, Inc., Artiva Biotherapeutics, Inc. and Takeda Pharmaceutical Company Limited.

Competition may also arise from non-cell based immune oncology platforms. For instance, we may experience competition from companies, such as Amgen Inc., BMS, Compass Therapeutics, Inc., F. Hoffmann-La Roche AG, Genmab A/S, GlaxoSmithKline plc, Harpoon Therapeutics, Inc., MacroGenics, Inc., Merus N.V., Regeneron Pharmaceuticals, Inc., and Xencor Inc., that are pursuing T cell engagers that target both the cancer antigen and T cell receptor, thus bringing both cancer cells and T cells in close proximity to maximize the likelihood of an immune response to the cancer cells. Additionally, companies, such as ADC Therapeutics SA, Amgen Inc., Daiichi Sankyo Company, Limited, Gilead Sciences, Inc., GlaxoSmithKline plc, ImmunoGen, Inc., Seattle Genetics, Inc., Silverback Therapeutics, Inc., and Sutro Biopharma, Inc., are pursuing antibody drug conjugates, which utilize the targeting ability of antibodies to deliver cell-killing agents directly to cancer cells.

Many of our competitors, either alone or with their collaboration partners, have significantly greater financial resources and expertise in research and development, pre-clinical testing, clinical trials, manufacturing, and marketing than we do. Future collaborations and mergers and acquisitions may result in further resource concentration among a smaller number of competitors.

Our commercial potential could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market or make our development more complicated. The key competitive factors affecting the success of all of our programs are likely to be efficacy, safety, convenience, and cost of manufacturing.

These competitors may also vie for a similar pool of qualified scientific and management talent, sites and patient populations for clinical trials, and investor capital, as well as for technologies complementary to, or necessary for, our programs.

Government Regulation and Product Approval

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

Government authorities in the United States (at the federal, state and local level) and in other countries extensively regulate, among other things, the research, development, testing, manufacturing, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, post-approval monitoring and reporting, marketing and export and import of biopharmaceutical products such as those we are developing. Our product candidates must be approved by the FDA before they may be legally marketed in the United States and by the appropriate foreign regulatory agency before they may be legally marketed in foreign countries. Generally, our activities in other countries will be subject to regulation that is similar in nature and scope as that imposed in the United States, although there can be important differences. Additionally, some significant aspects of regulation in Europe are addressed in a centralized way, but country-specific regulation remains essential in many respects. The process for obtaining regulatory marketing approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources.

U.S. Product Development Process

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

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

Before testing any biological product candidate, including our product candidates, in humans, the product candidate enters the preclinical testing stage. Preclinical tests, also referred to as nonclinical studies, include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies to assess the potential safety and activity of the product candidate. The conduct of the preclinical tests must comply with federal regulations and requirements including GLPs. The clinical trial sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. Some preclinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA raises concerns or questions regarding the proposed clinical trials and places the trial on a clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. The FDA may also impose clinical holds on a biological product candidate at any time before or during clinical trials due to safety concerns or non-compliance. If the FDA imposes a clinical hold, trials may not recommence without FDA authorization and then only under terms authorized by the FDA. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate such trials.

Clinical trials involve the administration of the biological product candidate to patients under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control. Clinical trials are conducted

under protocols detailing, among other things, the objectives of the clinical trial, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety, including stopping rules that assure a clinical trial will be stopped if certain adverse events should occur. Each protocol and any amendments to the protocol must be submitted to the FDA as part of the IND. Clinical trials must be conducted and monitored in accordance with the FDA's regulations comprising the GCP requirements, including the requirement that all research patients provide informed consent. Further, each clinical trial must be reviewed and approved by an independent IRB at or servicing each institution at which the clinical trial will be conducted. An IRB is charged with protecting the welfare and rights of trial participants and considers such items as whether the risks to individuals participating in the clinical trials are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the form and content of the informed consent that must be signed by each clinical trial subject or his or her legal representative and must monitor the clinical trial until completed. Certain clinical trials involving human gene transfer research also must be overseen by an Institutional Biosafety Committee (IBC), a standing committee to provide peer review of the safety of research plans, procedures, personnel training and environmental risks of work involving recombinant DNA molecules. IBCs are typically assigned certain review responsibilities relating to the use of recombinant DNA molecules, including reviewing potential environmental risks, assessing containment levels, and evaluating the adequacy of facilities, personnel training, and compliance with the National Institutes of Health Guidelines. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There are also requirements governing the reporting of ongoing clinical studies and clinical study results to public registries.

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

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

Post-approval clinical trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These clinical trials are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow-up. During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical trial investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA, and the investigators for serious and unexpected adverse events, any findings from other studies, tests in laboratory animals or *in vitro* testing that suggest a significant risk for human patients, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, if at all. The FDA or the sponsor or its data safety monitoring board may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research patients are being exposed to an unacceptable health risk, including risks inferred from other unrelated immunotherapy trials. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the biological product has been associated with unexpected serious harm to patients.

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

U.S. Review and Approval Processes

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

Under the Prescription Drug User Fee Act (PDUFA), as amended, each BLA must be accompanied by a significant user fee. The FDA adjusts the PDUFA user fees on an annual basis. PDUFA also imposes an annual program fee for biological products. Fee waivers or reductions are available in certain circumstances, including a waiver of the application fee for the first application filed by a small business. Additionally, no user fees are assessed on BLAs for products designated as orphan drugs, unless the product also includes a non-orphan indication.

Within 60 or 74 days following submission of the application, the FDA reviews a BLA submitted to determine if it is substantially complete before the agency accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review of the BLA. The FDA reviews the BLA to determine, among other things, whether the proposed product is safe, potent, and/or effective for its intended use, and has an acceptable purity profile, and whether the product is being manufactured in accordance with cGMP to assure and preserve the product's identity, safety, strength, quality, potency and purity. The FDA may refer applications for novel biological products or biological products that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. During the biological product approval process, the FDA also will determine whether a Risk Evaluation and Mitigation Strategy (REMS) is necessary to assure the safe use of the biological product. A REMS is a safety strategy to manage a known or potential serious risk associated with a medicine and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. If the FDA concludes a REMS is needed, the sponsor of the BLA must submit a proposed REMS. The FDA will not approve a BLA without a REMS, if required.

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

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

If a product receives regulatory approval, the approval may be limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. The FDA may impose restrictions and conditions on product distribution, prescribing, or dispensing in the form of a risk management plan, or

otherwise limit the scope of any approval. In addition, the FDA may require post marketing clinical trials, sometimes referred to as Phase 4 clinical trials, designed to further assess a biological product's safety and effectiveness, and testing and surveillance programs to monitor the safety of approved products that have been commercialized.

In addition, under the Pediatric Research Equity Act (PREA), a BLA or supplement to a BLA must contain data to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers.

Orphan Drug Designation

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

If a product that has orphan drug designation subsequently receives the first FDA approval for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full BLA, to market the same biologic for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity. Orphan drug exclusivity does not prevent FDA from approving a different drug or biologic for the same disease or condition, or the same drug or biologic for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the BLA application user fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Expedited Development and Review Programs

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

Any product, submitted to the FDA for approval, including a product with a fast track designation, may also be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. A product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new product designated for priority review in an effort to facilitate the review. Additionally, a product may be eligible for accelerated approval. Products studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug or biological product receiving accelerated approval perform adequate and well-controlled post-marketing clinical studies. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Regenerative Medicine Advanced Therapy (RMAT) designation was established by FDA in 2017 to facilitate an efficient development program for, and expedite review of, any drug that meets the following criteria: (1) it qualifies as a RMAT, which is defined as a cell therapy, therapeutic tissue engineering product, human cell and tissue product, or any combination product using such therapies or products, with limited exceptions; (2) it is intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition; and (3) preliminary clinical evidence indicates that the drug has the potential to address unmet medical needs for such a disease or condition. RMAT designation provides potential benefits that include more frequent meetings with FDA to discuss the development plan for the product candidate and eligibility for rolling review and priority review. Products granted RMAT designation may also be eligible for accelerated approval on the basis of a surrogate or intermediate endpoint reasonably likely to predict long-term clinical benefit, or reliance upon data obtained from a meaningful number of sites, including through expansion to additional sites. Once approved, when appropriate, the FDA can permit fulfillment of post-approval requirements under accelerated approval through the submission of clinical evidence, clinical studies, patient registries, or other sources of real world evidence such as electronic health records; through the collection of larger confirmatory datasets; or through post-approval monitoring of all patients treated with the therapy prior to approval.

Breakthrough therapy designation is also intended to expedite the development and review of products that treat serious or life-threatening conditions. The designation by FDA requires preliminary clinical evidence that a product candidate, alone or in combination with other drugs and biologics, demonstrates substantial improvement over currently available therapy on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. Breakthrough therapy designation comes with all of the benefits of fast track designation, which means that the sponsor may file sections of the BLA for review on a rolling basis if certain conditions are satisfied, including an agreement with FDA on the proposed schedule for submission of portions of the application and the payment of applicable user fees before the FDA may initiate a review.

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

In February 2021, the FDA granted fast track designation status to ALLO-501A for the treatment of adult patients with R/R DLBCL.

Post-Approval Requirements

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

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

The FDA also may require post-marketing testing, known as Phase 4 testing, and surveillance to monitor the effects of an approved product. Discovery of previously unknown problems with a product or the failure to comply with applicable FDA requirements can have negative consequences, including adverse publicity, judicial or administrative enforcement,

warning letters from the FDA, mandated corrective advertising or communications with doctors, and civil or criminal penalties, among others. Newly discovered or developed safety or effectiveness data may require changes to a product's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures. Also, new government requirements, including those resulting from new legislation, may be established, or the FDA's policies may change, which could delay or prevent regulatory approval of our products under development.

U.S. Marketing Exclusivity

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

Depending upon the timing, duration and specifics of the FDA approval of the use of our product candidates, some of our U.S. patents, if granted, may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Act. The Hatch-Waxman Act permits a patent restoration term of up to five years, as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of a BLA plus the time between the submission date of a BLA and the approval of that application. Only one patent applicable to an approved product is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The U.S. Patent and Trademark Office, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we may intend to apply for restoration of patent term for one of our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical trials and other factors involved in the filing of the relevant BLA.

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

Other U.S. Healthcare Laws and Compliance Requirements

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

The federal Anti-Kickback Statute prohibits, among other things, any person or entity, from knowingly and willfully offering, paying, soliciting or receiving any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or in return for purchasing, leasing, ordering or arranging for the purchase, lease or order of any item, good, facility or service reimbursable under Medicare, Medicaid or other federal healthcare programs. The term remuneration has been interpreted broadly to include anything of value. The federal Anti-Kickback Statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, formulary managers, and other individuals and entities on the other. There are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution. The exceptions and safe harbors are drawn narrowly and require strict compliance in order to offer protection. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchasing or recommending may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all of its facts and circumstances. Our practices may not in all cases meet all of the criteria for protection under a statutory exception or regulatory safe harbor.

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

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

The federal civil False Claims Act prohibits, among other things, any person or entity from knowingly presenting, or causing to be presented, a false claim for payment to, or approval by, the federal government or knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. As a result of a modification made by the Fraud Enforcement and Recovery Act of 2009, a claim includes "any request or demand" for money or property presented to the U.S. government. For example, pharmaceutical and other healthcare companies have been, and continue to be, investigated or prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product and for causing false claims to be submitted because of the companies' marketing of the product for unapproved, and thus non-reimbursable, uses.

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

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

We may be subject to data privacy and security regulations by both the federal government and the states in which we conduct our business. HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act (HITECH) and their implementing regulations, imposes requirements on certain types of individuals and entities relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to business associates that are independent contractors or agents of covered entities that receive or obtain protected health information in connection with providing a service on behalf of a covered entity. HITECH also created four new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, state laws govern the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Additionally, the federal Physician Payments Sunshine Act within the Affordable Care Act, and its implementing regulations, require that certain manufacturers of drugs, devices, biological and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) annually report information to CMS related to certain payments or other transfers of value made or distributed to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, or to entities or individuals at the request of, or designated on behalf of, physicians and teaching hospitals and certain ownership and investment interests held by physicians and their immediate family members. Beginning in 2022, applicable manufacturers also will be required to report such information regarding its payments and other transfers of value to physician assistants, nurse practitioners, clinical nurse specialists, anesthesiologist assistants, certified registered nurse anesthetists and certified nurse midwives during the previous year.

In order to distribute products commercially, we must comply with state laws that require the registration of manufacturers and wholesale distributors of drug and biological products in a state, including, in certain states, manufacturers and distributors who ship products into the state even if such manufacturers or distributors have no place of business within the state. Some states also impose requirements on manufacturers and distributors to establish the pedigree of product in the chain of distribution, including some states that require manufacturers and others to adopt new technology capable of tracking and

tracing product as it moves through the distribution chain. Several states have enacted legislation requiring pharmaceutical and biotechnology companies to establish marketing compliance programs, file periodic reports with the state, make periodic public disclosures on sales, marketing, pricing, clinical trials and other activities, and/or register their sales representatives, as well as to prohibit pharmacies and other healthcare entities from providing certain physician prescribing data to pharmaceutical and biotechnology companies for use in sales and marketing, and to prohibit certain other sales and marketing practices. All of our activities are potentially subject to federal and state consumer protection and unfair competition laws.

If our operations are found to be in violation of any of the federal and state healthcare laws described above or any other governmental regulations that apply to us, we may be subject to significant penalties, including without limitation, civil, criminal and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government programs, such as Medicare and Medicaid, refusal to allow us to enter into government contracts, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings, additional reporting requirements and/or oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Coverage, Pricing and Reimbursement

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

Different pricing and reimbursement schemes exist in other countries. In the EU, governments influence the price of pharmaceutical products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to fix their own prices for medicines, but monitor and control company profits. The downward pressure on health care costs has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, in some countries, cross-border imports from low-priced markets exert a commercial pressure on pricing within a country.

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

Healthcare Reform

In the United States and some foreign jurisdictions, there have been, and continue to be, several legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect the ability to profitably sell product candidates for which marketing approval is obtained. Among policy makers and payors in the United States and elsewhere, there is significant

interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

For example, the Affordable Care Act has substantially changed healthcare financing and delivery by both governmental and private insurers. Among the Affordable Care Act provisions of importance to the pharmaceutical and biotechnology industries, in addition to those otherwise described above, are the following:

- created an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs;
- increased the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively, and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price (AMP);
- created a new Medicare Part D coverage gap discount program, in which manufacturers must now agree to offer 70% point-of-sale discounts, off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturers' outpatient drugs to be covered under Medicare Part D;
- extended manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and added new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expanded of the entities eligible for discounts under the 340B Drug Discount Program;
- created a Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- expanded healthcare fraud and abuse laws, including the Anti-Kickback Statute and the Foreign Corrupt Practices Act (FCPA), created new government investigative powers, and enhanced penalties for noncompliance;
- created a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted, or injected;
- required reporting of certain financial arrangements with physicians and teaching hospitals;
- required annual reporting of certain information regarding drug samples that manufacturers and distributors provide to physicians; and
- established a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending.

There have been legal and political challenges to certain aspects of the Affordable Care Act. For example, President Trump signed several executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the Affordable Care Act. In December 2017, Congress repealed the tax penalty for an individual's failure to maintain Affordable Care Act-mandated health insurance, commonly known as the "individual mandate", as part of the Tax Cuts and Jobs Act of 2017 (Tax Act). In addition, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the Affordable Care Act's mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminated the health insurer tax.

Further, the Bipartisan Budget Act of 2018 (BBA), among other things, amended the Affordable Care Act, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". In December 2018, CMS published a final rule permitting further collections and payments to and from certain Affordable Care Act qualified health plans and health insurance issuers under the Affordable Care Act risk adjustment program in response to the outcome of federal district court litigation regarding the method CMS uses to determine this risk adjustment. On December 14, 2018, a Texas U.S. District Court Judge ruled that the Affordable Care Act is unconstitutional in its entirety because the "individual mandate" was repealed by Congress as part of the Tax Act. Additionally, on December 18, 2019, the U.S. Court of Appeals for the 5th Circuit upheld the District Court ruling that the individual mandate was unconstitutional and remanded the case back to the District Court to determine whether the remaining provisions of the Affordable Care Act are invalid as well. The U.S. Supreme Court is currently reviewing this case, but it is unknown when a decision will be reached. Although the U.S. Supreme Court has yet to rule on the constitutionality of the Affordable Care Act, on January 28, 2021, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through May 15, 2021 for purposes of obtaining health insurance coverage through the Affordable Care Act marketplace. The executive order also instructs certain

governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the Affordable Care Act. It is unclear how the Supreme Court ruling, other such litigation, and the healthcare reform measures of the Biden administration will impact the Affordable Care Act.

Further legislation or regulation could be passed that could harm our business, financial condition and results of operations. Other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. For example, in August 2011, President Obama signed into law the Budget Control Act of 2011, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction of at least $1.2 trillion for fiscal years 2012 through 2021, triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect beginning on April 1, 2013 and will stay in effect through 2030 unless additional Congressional action is taken. However, COVID-19 relief support legislation suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2021. In January 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Additionally, there has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and federal and state legislative activity designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. At the federal level, the Trump administration used several means to propose or implement drug pricing reform, including through federal budget proposals, executive orders and policy initiatives. For example, on July 24, 2020 and September 13, 2020, the Trump administration announced several executive orders related to prescription drug pricing that attempt to implement several of the administration's proposals. The FDA also released a final rule, effective November 30, 2020, implementing a portion of the importation executive order providing guidance for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020, HHS finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The implementation of the rule has been delayed by the Biden administration from January 1, 2022 to January 1, 2023 in response to ongoing litigation. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a new safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers, the implementation of which have also been delayed pending review by the Biden administration until March 22, 2021. On November 20, 2020, CMS issued an interim final rule implementing President Trump's Most Favored Nation executive order, which would tie Medicare Part B payments for certain physician-administered drugs to the lowest price paid in other economically advanced countries, effective January 1, 2021. On December 28, 2020, the United States District Court in Northern California issued a nationwide preliminary injunction against implementation of the interim final rule. However, it is unclear whether the Biden administration will work to reverse these measures or pursue similar policy initiatives. Individual states in the United States have also become increasingly active in passing legislation and implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

We anticipate that these and other healthcare reform efforts will continue to result in additional downward pressure on coverage and the price that we receive for any approved product, and could seriously harm our business. Any reduction in reimbursement from Medicare and other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products. Such reforms could have an adverse effect on anticipated revenue from product candidates that we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates. Further, it is possible that additional governmental action will be taken in response to the COVID-19 pandemic.

The Foreign Corrupt Practices Act

The FCPA prohibits any U.S. individual or business from paying, offering, or authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including

international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Additional Regulation

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

Europe / Rest of World Government Regulation

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

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

To obtain regulatory approval of an investigational drug or biological product under EU regulatory systems, we must submit an MAA. The application used to file the BLA in the United States is similar to that required in the EU, with the exception of, among other things, country-specific document requirements.

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

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

European Union General Data Protection Regulation

In addition to EU regulations related to the approval and commercialization of our products, we may be subject to the EU's General Data Protection Regulation (GDPR). The GDPR imposes stringent requirements for controllers and processors of personal data of persons in the EU, including, for example, more robust disclosures to individuals and a strengthened individual data rights regime, shortened timelines for data breach notifications, limitations on retention of information, increased requirements pertaining to special categories of data, such as health data, and additional obligations when we contract with third-party processors in connection with the processing of the personal data. The GDPR also imposes strict rules on the transfer of personal data out of the European Union to the United States and other third countries. In addition, the GDPR provides that EU member states may make their own further laws and regulations limiting the processing of personal data, including genetic, biometric or health data.

The GDPR applies extraterritorially, and we may be subject to the GDPR because of our data processing activities that involve the personal data of individuals located in the European Union, such as in connection with our EU clinical trials. Failure to comply with the requirements of the GDPR and the applicable national data protection laws of the EU member states may result in fines of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year,

whichever is higher, and other administrative penalties. GDPR regulations may impose additional responsibility and liability in relation to the personal data that we process and we may be required to put in place additional mechanisms to ensure compliance with the new data protection rules.

California Consumer Privacy Act

California recently enacted legislation, effective January 1, 2020, that has been dubbed the first "GDPR-like" law in the United States. Known as the California Consumer Privacy Act (CCPA), it creates new individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA requires covered companies to provide new disclosures to California consumers, provides such consumers new ways to opt-out of certain sales of personal information, and allows for a new cause of action for data breaches. As our business progresses, the CCPA may become applicable and impact (possibly significantly) our business activities and exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information.

Human Capital

As of February 1, 2021, we had 265 total employees, of which 264 are full-time. Of our full-time employees, 69 hold Ph.D. and/or M.D. degrees, and 195 are engaged in research, development and technical operations. Substantially all of our employees are located in South San Francisco and Newark, California. Our employees are not represented by labor unions or covered by collective bargaining agreements. We believe that our employee morale is healthy and consider our relationship with our employees to be good.

We believe our workforce is key to Allogene's success and we actively focus on the following core elements of human capital: (1) our "One Allogene" culture, (2) diversity, equity and inclusion, and (3) recruitment, development and retention. Given the COVID-19 pandemic, we have also focused on COVID-19 safety measures and new ways of generating employee engagement.

One Allogene Culture

We have recently advanced an expression of our culture under the framework of "One Allogene":

One Allogene

We only succeed as a team.
We accomplish more together than as individuals when we unite as one Allogene community.

We are resilient, because we strive to save the lives of people with cancer.
We come together with purpose, courage and flexibility despite challenges or uncertainty because every potential patient is someone's partner, parent, child, sibling or friend.

We aim for excellence and give it our all.
We pursue scientific innovation with a focus on quality and integrity in everything we do to forever change how cancer is treated.

We take ownership and get things done.
We are leaders who embrace urgency, initiative and follow through, with the humility to know each one of us is vital to making AlloCAR T therapy a reality.

We are good to one another.
We value diversity of thought, background and expertise, we earn each other's trust, and assume good intention as we collaborate to help patients.

We are creating a scientific revolution.

We are One Allogene

These core elements of our culture are meant to define how and why we do business. In addition, our core values of collaboration, leadership, innovation and focus help drive our culture and behaviors and are layered into our performance reviews so that we can keep ourselves and our employees accountable.

Diversity, Equity and Inclusion

We are committed to cultivating, fostering, and preserving a culture of diversity, equity and inclusion (DEI). We foster an inclusive environment through respect, collaboration, and open communication. We embrace and encourage differences in age, color, disability, ethnicity, family or marital status, gender identity or expression, language, national origin, culture or customs, physical and mental ability, political affiliation, race, religion, sexual orientation, socio-economic status, veteran status, and other characteristics that make our employees unique. We also embrace differences in experience and background, and welcome diversity of opinions and thought when making decisions.

As of February 1, 2021, our employees were self-reportedly 49% women. Of our Director-level and above employees, 42% were self-reportedly women.

In addition, as of February 1, 2021, 66% of all employees were self-reportedly ethnic or racial minorities in the U.S., with 52% Asian, 3% Black or African American, 5% Hispanic or Latino and 5% of other minority groups or two or more races. Of our Director-level and above employees, 39% were self-reportedly ethnic or racial minorities in the U.S., with 30% Asian, 1% Black or African American, 1% Hispanic or Latino and 6% of other minority groups or two or more races.

Although we are proud of our efforts and metrics to date, we are focused on broadening our outreach and increasing opportunities to underrepresented minorities, including increased recruitment efforts in minority communities by posting our open positions on top job boards for diversity hiring, participating in diversity focused career fairs and hosting science, technology, engineering, and mathematics (STEM)-based outreach in underserved communities at the elementary, junior high and high school level. We have and will continue to conduct unconscious bias training and provide guidance with respect to best practices with a focus on DEI for interviewers. Our recruiters and hiring managers are also encouraged to consider candidates from underrepresented groups and to have diverse interview panels. In addition, we have an Employee Referral Bonus Program that rewards employees for referring candidates from underrepresented groups that are ultimately hired.

Our DEI initiatives are applicable to our practices and policies, such as those on recruitment, compensation and professional development. We are also progressing the ongoing development of an inclusive work environment that encourages:

- Respectful communication and cooperation between all employees.
- Valuing and soliciting input, feedback and opinions from relevant staff.
- Teamwork and employee participation, permitting the representation of employee perspectives.
- Employer and employee contributions to the communities we serve to promote a greater understanding and respect for the diversity.

To champion our efforts in this area, we established a governance structure and formed a DEI Committee as well as an associated DEI Advisory Board, each of which is comprised of employees of various levels, departments and backgrounds. The DEI Committee formalized a DEI mission statement and also advanced a DEI policy that sets forth our commitment to the importance of DEI and the responsibility of our employees to adhere to our policy, including by treating others with dignity and respect at all times. Pursuant to our DEI policy, all employees are also required to attend and complete annual diversity awareness training to enhance their knowledge to fulfill this responsibility. The DEI Committee and DEI Advisory Board continually work to identify gaps, respond to feedback provided by peers, and present suggestions on our practices and policies to encourage and enforce an environment in which all employees feel included and empowered to achieve their best.

We believe in equal pay for equal work. We establish components and ranges of compensation based on market and benchmark data. Within this context, we strive to pay all employees equitably within a reasonable range, taking into consideration factors such as role; market data; internal equity; job location; relevant experience; and individual, department and company performance. We also regularly review our compensation practices and analyze our compensation decisions for individual employees and our workforce as a whole on at least an annual basis. In 2020, we conducted a pay equity analysis which we believe demonstrated that our compensation practices and structure are equitable. If we identify employees with unjustified pay gaps, we review and take appropriate action to ensure fidelity between our stated philosophy and actions.

We plan to continue to seek feedback from the DEI Committee, DEI Advisory Board and all our employees to help us achieve our full potential.

Recruitment, Development and Retention

Successful execution of our strategy is dependent on attracting, developing and retaining our employees. We believe our leadership in the field of allogeneic cell therapy and our culture have allowed us to recruit a talented workforce. In 2020,

we recruited over 90 new employees. Our average time to hire was less than three months and a significant majority of candidates accepted our offers.

We believe our total compensation package also helps recruit and retain our employees. We strive to provide pay, benefits, and services that are competitive to market and create incentives to attract and retain employees. Our compensation package includes market-competitive pay, broad-based stock grants, health care and 401(k) plan benefits, paid time off and family leave, among others. We also provide annual incentive bonus opportunities that are tied to both company performance as well as individual performance to foster a pay-for-performance culture.

Developing our employees is important, and we focus on providing training opportunities and promotional opportunities. Learning and development, training and other resources are an integral part of retaining our employees and creating a culture of learning and leadership within Allogene. For instance, we have an annual required manager training that allows managers to learn and practice fundamental management skills to enable them to be more effective managers. We also train relevant members of our team on important environmental health and safety topics to help ensure we protect our people and our environment as we operate our business. We encourage our employees to participate and take advantage of a variety of learning and development resources, including online business skills courses, professional development events, and external training programs based on individual needs. We also actively review employee performance and business needs every six months that lead to promotional opportunities for employees across departments and levels.

We believe Allogene is an attractive workplace and our voluntary attrition rate for 2020 was less than 10%. However, we are in a highly competitive field and geographic region for life science talent and historically have faced proportionally higher attrition among our research, development and technical operations teams than our general and administrative teams. We believe we will continue to face significant competition for life science talent.

COVID-19 Employee Safety and Engagement

In March 2020 and in response to the spread of COVID-19 and state and local orders, we limited the number of staff working at our facilities. We also established an internal COVID-19 task force to ensure timely communication and decision-making in response to COVID-19. For laboratory, manufacturing and support staff onsite, we implemented new safety protocols, such as facial covering, social distancing and temperature check requirements. We continue to provide updates regarding COVID-19 and communicate with our employees on a frequent basis. For employees working remotely, we have provided collaboration tools and resources, including loaning certain office equipment and providing trainings to help leaders effectively lead and manage remote teams.

In addition, we enhanced and promoted programs to support our culture initiatives and employees' wellbeing. For instance, we have implemented Human Resources-led virtual check-ins with our employees (both new hires and tenured employees), conducted surveys regarding culture and COVID-19 related initiatives, and also encouraged skip-level meetings in addition to emphasizing the importance of managers having regular 1:1 meetings with their team members. We also instituted biweekly virtual town-halls led by our Chief Executive Officer to provide all employees updates relating to our business and the opportunity to anonymously ask questions of our leadership team. In addition, we provided emergency pay to any employees unable to work due to the pandemic impact and implemented virtual fitness and meditation classes. We plan to stay engaged with our employees and work to continuously improve to strengthen Allogene's culture and commitment to patients and stockholders.

Corporate Information

We were incorporated in Delaware in November 2017. Our principal executive offices are located at 210 East Grand Avenue, South San Francisco, California 94080, and our telephone number is (650) 457-2700. Our corporate website address is www.allogene.com. We make available, free of charge on our website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports, as soon as reasonably practicable after filing such reports with the Securities and Exchange Commission. Alternatively, you may access these reports at the SEC's website at www.sec.gov. Information contained on or accessible through our website is not a part of this report, and the inclusion of our website address in this report is an inactive textual reference only.

Item 1A. Risk Factors

RISK FACTORS

An investment in shares of our common stock involves a high degree of risk. We have identified the following material factors that make an investment in our common stock speculative or risky. You should carefully consider the following risk factors, as well as the other information in this Annual Report. The occurrence of any of the following risks could harm our business, financial condition, results of operations and growth prospects or cause our actual results to differ materially from those contained in forward-looking statements we have made in this Annual Report and those we may make from time to time. The risks described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations.

Risks Related to Our Business and Industry

We have incurred net losses in every period since our inception and anticipate that we will incur substantial net losses in the future.

We are a clinical-stage biopharmaceutical company and investment in biopharmaceutical product development is highly speculative because it entails substantial upfront capital expenditures and significant risk that any potential product candidate will fail to demonstrate adequate efficacy or an acceptable safety profile, gain regulatory approval and become commercially viable. We are advancing an allogeneic CAR T platform of primarily early-stage product candidates and have no products approved for commercial sale and have not generated any revenue from product sales to date, and we will continue to incur significant research and development and other expenses related to our ongoing operations. As a result, we are not profitable and have incurred net losses in each period since our inception. For the year ended December 31, 2020, we reported a net loss of $250.2 million. As of December 31, 2020, we had an accumulated deficit of $646.3 million.

We expect to incur significant expenditures for the foreseeable future, and we expect these expenditures to increase as we continue our research and development of, and seek regulatory approvals for, product candidates based on our engineered allogeneic T cell platform. Because our allogeneic T cell product candidates are based on new technologies and will require the creation of inventory of mass-produced, off-the-shelf product, they will require extensive research and development and have substantial manufacturing and processing costs. In addition, costs to treat patients with relapsed or refractory cancer and to treat potential side effects that may result from our product candidates can be significant.

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

Our engineered allogeneic T cell product candidates represent a novel approach to cancer treatment that creates significant challenges for us.

We are developing a pipeline of allogeneic T cell product candidates that are engineered from healthy donor T cells to express CARs and are intended for use in any patient with certain cancers. Advancing these novel product candidates creates significant challenges for us, including:

- manufacturing our product candidates to our or regulatory specifications and in a timely manner to support our clinical trials, and, if approved, commercialization;
- sourcing clinical and, if approved, commercial supplies for the raw materials used to manufacture our product candidates;
- understanding and addressing variability in the quality of a donor's T cells, which could ultimately affect our ability to produce product in a reliable and consistent manner and treat certain patients;
- educating medical personnel regarding the potential side effect profile of our product candidates, if approved, such as the potential adverse side effects related to cytokine release syndrome (CRS), neurotoxicity, graft-versus-host disease (GvHD), prolonged cytopenia and neutropenic sepsis;

- using medicines to preempt or manage adverse side effects of our product candidates, which may not adequately control the side effects and/or may have other safety risks or a detrimental impact on the efficacy of the treatment;
- conditioning patients with chemotherapy and ALLO-647 or other lymphodepletion agents in advance of administering our product candidates, which may increase the risk of infections and other adverse side effects;
- obtaining regulatory approval, as the U.S. Food and Drug Administration (FDA) and other regulatory authorities have limited experience with development of allogeneic T cell therapies for cancer; and
- establishing sales and marketing capabilities upon obtaining any regulatory approval to gain market acceptance of a novel therapy.

Gene-editing is a relatively new technology, and if we are unable to use this technology in our intended product candidates, our revenue opportunities will be materially limited.

Cellectis's TALEN technology involves a relatively new approach to gene editing, using sequence-specific DNA-cutting enzymes, or nucleases, to perform precise and stable modifications in the DNA of living-cells and organisms. Although Cellectis has generated nucleases for many specific gene sequences, it has not created nucleases for all gene sequences that we may seek to target, and Cellectis may have difficulty creating nucleases for other gene sequences that we may seek to target, which could limit the usefulness of this technology. This technology may also not be shown to be effective in clinical studies that Cellectis, we or other licensees of Cellectis technology may conduct, or may be associated with safety issues that may negatively affect our development programs. For instance, gene-editing may create unintended changes to the DNA such as a non-target site gene-editing, a large deletion, or a DNA translocation, any of which could lead to oncogenesis. The gene-editing of our product candidates may also not be successful in limiting the risk of GvHD or premature rejection by the patient.

In addition, the gene-editing industry is rapidly developing, and our competitors may introduce new technologies that render our technology obsolete or less attractive. New technology could emerge at any point in the development cycle of our product candidates. As competitors use or develop new technologies, any failures of such technology could adversely impact our program. We also may be placed at a competitive disadvantage, and competitive pressures may force us to implement new technologies at a substantial cost. In addition, our competitors may have greater financial, technical and personnel resources that allow them to enjoy technological advantages and may in the future allow them to implement new technologies before we can. We cannot be certain that we will be able to implement technologies on a timely basis or at a cost that is acceptable to us. If we are unable to maintain technological advancements consistent with industry standards, our operations and financial condition may be adversely affected.

The COVID-19 global pandemic is adversely impacting our business, including our preclinical studies and clinical trials.

Public health crises such as pandemics or other outbreaks could adversely impact our business. As a result of the COVID-19 pandemic, or similar pandemics, and government response to pandemics, we have and may in the future experience disruptions that could severely impact our business, preclinical studies and clinical trials, including:

- halting or suspending enrollment in our clinical trials;
- delays or difficulties in enrolling and retaining patients in our clinical trials;
- interruption of key clinical trial activities, such as obtaining laboratory materials for collecting patient samples, clinical trial site data monitoring and efficacy, safety and translational data collection, processing and analyses, due to limitations on travel imposed or recommended by federal, state or local governments, employers and others or interruption of clinical trial subject visits, which may impact the collection and integrity of subject data and clinical study endpoints;
- delays or difficulties in initiating or expanding clinical trials, including delays or difficulties with clinical site initiation and recruiting clinical site investigators and clinical site staff;
- increased adverse events and deaths in our clinical trials due to COVID-19 related infections, which may result in increased complications due to immune suppression from our lymphodepletion regimen;
- increased rates of patients withdrawing from our clinical trials following enrollment as a result of contracting COVID-19 or being forced to quarantine;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;

- delays or disruptions in preclinical experiments and investigational new drug application-enabling studies due to restrictions of on-site staff and unforeseen circumstances at contract research organizations and vendors;
- interruption or delays in the operations of the FDA and comparable foreign regulatory agencies;
- interruption of, or delays in receiving, supplies of our raw materials or product candidates from our suppliers and contract manufacturing organizations (CMOs) due to staffing shortages, production slowdowns or stoppages and disruptions in delivery systems, or due to prioritization of production for COVID-19 specific therapies or vaccines; and
- limitations on employee resources that would otherwise be focused on advancing our business, including because of sickness of employees or their families, including executive officers and other key employees, the desire of employees to avoid contact with large groups of people, an increased reliance on working from home or mass transit disruptions.

State and local government response to the pandemic has included "shelter in place", "stay at home" and similar types of orders, which have limited travel and business operations in our locations, the location of our clinical trial sites, and the location of key vendors, including our CMOs. Beginning the week of March 9, 2020, the majority of our workforce began working from home. The effects of the stay-at-home orders and our work-from-home policies may negatively impact productivity, disrupt our business and delay our development programs, regulatory and commercialization timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course. While we, our clinical trials sites and certain of our vendors, including our CMOs, are currently exempt from the orders for certain essential operations, any of the applicable exemptions may be curtailed or revoked, which would further adversely impact our business.

In addition, the trading prices for our common stock and other biopharmaceutical companies have been highly volatile as a result of the COVID-19 pandemic. As a result, we may face difficulties raising capital through sales of our common stock or such sales may be on unfavorable terms. Market and economic deterioration could also adversely impact our portfolio of corporate and government bonds.

The COVID-19 pandemic continues to rapidly evolve. The extent to which the pandemic may impact our business, preclinical studies and clinical trials will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration of the pandemic, travel restrictions and actions to contain the pandemic or treat its impact, such as social distancing and quarantines or lock-downs in the United States and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease.

We are heavily reliant on our partners for access to key gene editing technology for the manufacturing and development of our product candidates.

A critical aspect to manufacturing allogeneic T cell product candidates involves gene editing the healthy donor T cells in an effort to avoid GvHD and to limit the patient's immune system from attacking the allogeneic T cells. GvHD results when allogeneic T cells start recognizing the patient's normal tissue as foreign. We use Cellectis's TALEN gene-editing technology to inactivate a gene coding for TCRα, a key component of the natural antigen receptor of T cells, to cause the engineered T cells to be incapable of recognizing foreign antigens. Accordingly, when injected into a patient, the intent is for the engineered T cell not to recognize the tissue of the patient as foreign and thus avoid attacking the patient's tissue. In addition, we use TALEN gene editing to inactivate the CD52 gene in donor T cells, which codes for the target of an anti-CD52 monoclonal antibody. Anti-CD52 monoclonal antibodies deplete CD52 expressing T cells in patients while sparing therapeutic allogeneic T cells lacking CD52. By administering an anti-CD52 antibody prior to infusing our product candidates, we believe we have the potential to reduce the likelihood of a patient's immune system from rejecting the engineered allogeneic T cells for a sufficient period of time to enable a window of persistence during which the engineered allogeneic T cells can actively target and destroy the cancer cells. However, the antibody may not have the benefits that we anticipate and could have adverse effects.

We rely on an agreement with Cellectis for rights to use TALEN technology for 15 select cancer targets, including BCMA, FLT3, CD70, DLL3 and other targets included in our pipeline. We also rely on Cellectis, through our agreement with Servier, for rights to UCART19, ALLO-501 and ALLO-501A. We would need an additional license from Cellectis or access to other gene-editing technology to research and develop product candidates directed at targets not covered by our existing agreements with Cellectis and Servier. In addition, the Cellectis gene-editing technology may fail to produce viable product candidates. Moreover, both Servier and Cellectis may terminate our respective agreements in the event of a material breach of the agreements, or upon certain insolvency events. If our agreements were terminated or we required other gene editing

technology, such a license or technology may not be available to us on reasonable terms, or at all, particularly given the limited number of alternative gene-editing technologies in the market.

In addition, pursuant to the Servier Agreement, we expect Servier to continue to support our clinical trials of ALLO-501 and ALLO-501A for the treatment of patients with R/R NHL. Should Servier become unable to continue providing its share of financial support for the ALLO-501 and ALLO-501A clinical trials, our expenses may be greater than we currently expect and we may have difficulty progressing our ongoing and planned clinical trials in a timely manner. Moreover, as the CALM and PALL clinical trials of UCART19 have completed, we are reliant on Servier for progressing a development strategy for ALL and any development strategy may face challenges, such as regulatory delays and unforeseen expenses if we consolidate programs.

Our product candidates are based on novel technologies, which makes it difficult to predict the time and cost of product candidate development and obtaining regulatory approval.

We have concentrated our research, development and manufacturing efforts on our engineered allogeneic T cell therapy and our future success depends on the successful development of this therapeutic approach. We are in the early stages of developing our platform and there can be no assurance that any development problems we experience in the future will not cause significant delays or unanticipated costs, or that such development problems can be overcome. We may also experience delays in developing a sustainable, reproducible and scalable manufacturing process or transferring that process to commercial partners, which may prevent us from completing our clinical studies or commercializing our products on a timely or profitable basis, if at all. In addition, since we are in the early stages of clinical development, we do not know the doses to be evaluated in pivotal trials or, if approved, commercially. Finding a suitable dose for our cell therapy product candidates as well as ALLO-647 may delay our anticipated clinical development timelines. In addition, our expectations with regard to our scalability and costs of manufacturing may vary significantly as we develop our product candidates and understand these critical factors.

We are also advancing product candidates against unexplored targets and with new technology. For example, we are advancing ALLO-316 against a target, CD70, that has not been validated by any autologous CAR T therapies. ALLO-316 may have limited efficacy or have off-target toxicities. Since CD70 is found on activated T cells, ALLO-316 may also cause fratricide resulting in the loss of ALLO-316 cells or increase the risk of infections. In addition, our ALLO-605 product candidate is our first TurboCAR candidate that is designed to mimic cytokine signaling selectively within CAR T cells. Our TurboCAR product candidates may not demonstrate any of the benefits that we expect. As potentially more potent, our TurboCAR product candidates may also increase the risk of adverse events, such as CRS and neurotoxicity.

The clinical study requirements of the FDA, European Medicines Agency (EMA) and other regulatory agencies and the criteria these regulators use to determine the safety and efficacy of a product candidate are determined according to the type, complexity, novelty and intended use and market of the potential products. The regulatory approval process for novel product candidates such as ours can be more complex and consequently more expensive and take longer than for other, better known or extensively studied pharmaceutical or other product candidates. We face additional challenges in obtaining regulatory approval for ALLO-647, which we use as part of our lymphodepletion regimen, and for which we would seek to obtain approval concurrently with approval of a CAR T cell product candidate. Approvals by the EMA and FDA for existing autologous CAR T therapies, such as Kymriah and Yescarta, may not be indicative of what these regulators may require for approval of our therapies. Also, while we expect reduced variability in our products candidates compared to autologous products, we do not have significant clinical data supporting any benefit of lower variability and the use of healthy donor material may create separate variability challenges for us. More generally, approvals by any regulatory agency may not be indicative of what any other regulatory agency may require for approval or what such regulatory agencies may require for approval in connection with new product candidates. Moreover, our product candidates may not perform successfully in clinical trials or may be associated with adverse events that distinguish them from the autologous CAR T therapies that have previously been approved. For instance, allogeneic product candidates may result in GvHD not experienced with autologous products. Even if we collect promising initial clinical data of our product candidates, longer-term data may reveal new adverse events or responses that are not durable. Unexpected clinical outcomes would significantly impact our business.

Our business is highly dependent on the success of our lead product candidates. If we are unable to advance clinical development, obtain approval of and successfully commercialize our lead product candidates for the treatment of patients in approved indications, our business would be significantly harmed.

Our business and future success depends on our ability to advance clinical development, obtain regulatory approval of, and then successfully commercialize, our lead product candidates, including ALLO-501A and ALLO-715. Because ALLO-501, ALLO-501A and ALLO-715 are among the first allogeneic products to be evaluated in the clinic, the failure of any such product candidate, or the failure of other allogeneic T cell therapies, including for reasons due to safety, efficacy or durability, may impede our ability to develop our product candidates, and significantly influence physicians' and regulators' opinions in

regards to the viability of our entire pipeline of allogeneic T cell therapies. For instance, we are planning to progress to the Phase 2 portion of the ALPHA2 trial of ALLO-501A by the end of 2021. In order to do so, we will need to complete many objectives, such as continued enrollment in the ALPHA trial and ALPHA2 Phase 1 portion of the trial, timely patient follow-up, generation of positive Phase 1 data, advancement of cGMP manufacturing of ALLO-501A and approval from the FDA on any Phase 2 plan. If we are unable to achieve any of these objectives, we may not be able to advance to Phase 2 in a timely manner or at all, which would significantly harm our business.

All of our product candidates, including our lead product candidates, will require additional clinical and non-clinical development, regulatory review and approval in multiple jurisdictions, substantial investment, access to sufficient commercial manufacturing capacity and significant marketing efforts before we can generate any revenue from product sales. In addition, because our other product candidates are based on similar technology as our lead product candidates, if any of the lead product candidates encounters safety or efficacy problems, manufacturing problems, developmental delays, regulatory issues or other problems, our development plans and business would be significantly harmed.

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

Undesirable or unacceptable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign regulatory authorities. Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Approved autologous CAR T therapies and those under development have shown frequent rates of CRS, neurotoxicity, serious infections, prolonged cytopenia and hypogammaglobulinemia, and adverse events have resulted in the death of patients. We expect similar adverse events for allogeneic CAR T product candidates.

Our allogeneic CAR T cell product candidates may also cause unique adverse events related to the differences between the donor and patients, such as GvHD or infusion reactions. In addition, we utilize a lymphodepletion regimen, which generally includes fludarabine, cyclophosphamide and ALLO-647, that may cause serious adverse events. For instance, because the regimen will cause a transient and sometimes prolonged immune suppression, patients will have an increased risk of infection, such as to COVID-19, that may be unable to be cleared by the patient and ultimately lead to death. Our lymphodepletion regimen has caused and may also cause prolonged cytopenia. We are also exploring various dosing strategies for lymphodepletion in our clinical trials, such as higher and lower dosing of ALLO-647 in combination with fludarabine and cyclophosphamide, which may increase the risk of serious adverse events.

In our and Servier's clinical trials of allogeneic CAR T product candidates, the most common severe or life threatening adverse events resulted from serious infections, prolonged cytopenia, prolonged pancytopenia, hypokalemia, multiple organ dysfunction syndrome and neutropenic sepsis. As reported, patients have died from adverse events and future patients may also experience toxicity resulting in death. For additional safety data, please see "Business--Product Pipeline and Development Strategy".

As we treat and re-treat more patients with our product candidates in our clinical trials, new less common side effects may also emerge. For instance, our allogeneic CAR T cell product candidates undergo gene engineering by using lentivirus and TALEN nucleases that can cause insertion, deletion, or chromosomal translocation. These changes can cause allogeneic CAR T cells to proliferate uncontrollably and may cause adverse events. In addition, we may combine the use of our product candidates with other investigational therapies that may cause separate adverse events or events related to the combination. For instance, we are advancing a combination of ALLO-715 and nirogacestat, a gamma secretase inhibitor, in a cohort in the UNIVERSAL trial. The most common adverse events relating to nirogacestat in prior trials have included diarrhea, nausea, fatigue, hypophosphatemia, vomiting, rash, cough, decreased appetite, pyrexia and hypokalemia. These or other adverse events could result in the suspension of therapy or otherwise adversely impact the UNIVERSAL trial.

If unacceptable toxicities arise in the development of our product candidates, we could suspend or terminate our trials or the FDA or comparable foreign regulatory authorities could order us to cease clinical trials or deny approval of our product candidates for any or all targeted indications. The data safety monitoring board may also suspend or terminate a clinical trial at any time on various grounds, including a finding that the research patients are being exposed to an unacceptable health risk, including risks inferred from other unrelated immunotherapy trials. Treatment-related side effects could also affect patient recruitment or the ability of enrolled subjects to complete the trial or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff, as toxicities resulting from T cell therapy are not normally encountered in the general patient population and by medical personnel. We have trained and expect to have to train medical personnel using CAR T cell product candidates to understand the side effect profile of our

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

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

Before obtaining regulatory approvals for the commercial sale of our product candidates, we must demonstrate through lengthy, complex and expensive preclinical testing and clinical trials that our product candidates are both safe and effective for use in each target indication. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of preclinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials, including in any post-approval studies.

There is typically an extremely high rate of attrition from the failure of product candidates proceeding through clinical trials. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy profile despite having progressed through preclinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy, insufficient durability of efficacy or unacceptable safety issues, notwithstanding promising results in earlier trials. Most product candidates that commence clinical trials are never approved as products.

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

Initial, interim and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publish initial, interim or preliminary data from our clinical studies. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. For instance, we have published preliminary data from the ALPHA trial and UNIVERSAL trial, however such results are preliminary in nature, do not bear statistical significance and should not be viewed as predictive of ultimate success. It is possible that such results will not continue or may not be repeated in ongoing or future clinical trials of anti-CD19 or anti-BCMA CAR T cell product candidates or our other product candidates.

Preliminary data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, initial, interim and preliminary data should be viewed with caution until the final data are available. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects.

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

We plan to submit INDs for additional product candidates in the future, including an IND for ALLO-605 in the first half of 2021. We cannot be sure that submission of an IND or IND amendment will result in the FDA allowing testing and clinical trials to begin, or that, once begun, issues will not arise that suspend or terminate such clinical trials. The manufacturing of allogeneic CAR T cell therapy remains an emerging and evolving field. Accordingly, we expect chemistry, manufacturing and control related topics, including product specification, will be a focus of IND reviews, which may delay the clearance of INDs or IND amendments. For instance, we intend to optimize the manufacturing of our product candidates, including ALLO-501A, and regulatory authorities may require additional studies or clinical data to support the changes, which could delay our clinical trial timelines, including the Phase 2 portion of the ALPHA2 trial. Additionally, even if such regulatory authorities agree with the design and implementation of the clinical trials set forth in an IND, IND amendment or clinical trial application, we cannot guarantee that such regulatory authorities will not change their requirements in the future.

In addition, we submitted a standalone cross-reference IND for ALLO-647, which is being used as part of lymphodepletion in all our clinical trials. While our IND has been accepted, we have to update the IND for any new IND or

IND amendment relating to our allogeneic CAR T cell product candidates and we plan to update the IND as we finalize pivotal manufacturing of ALLO-647 at one of our CMOs. Any regulatory issues related to the review of our ALLO-647 IND updates or to the development of ALLO-647 could delay development of our allogeneic CAR T cell product candidates and significantly affect our business.

We may encounter substantial delays in our clinical trials, or may not be able to conduct our trials on the timelines we expect.

Clinical testing is expensive, time consuming and subject to uncertainty. We cannot guarantee that any clinical studies will be conducted as planned or completed on schedule, if at all. Even if our trials begin as planned, issues may arise that could suspend or terminate such clinical trials. A failure of one or more clinical study can occur at any stage of testing, and our future clinical studies may not be successful. Events that may prevent successful or timely completion of clinical development include:

- inability to generate sufficient preclinical, toxicology or other in vivo or in vitro data to support the initiation of clinical studies;
- delays in sufficiently developing, characterizing or controlling a manufacturing process suitable for clinical trials;
- difficulty sourcing healthy donor material of sufficient quality and in sufficient quantity to meet our development needs;
- delays in developing suitable assays for screening patients for eligibility for trials with respect to certain product candidates;
- delays in reaching a consensus with regulatory agencies on study design;
- delays in reaching agreement on acceptable terms with prospective contract research organizations (CROs) and clinical study sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical study sites;
- delays in obtaining required institutional review board (IRB) approval at each clinical study site;
- imposition of a temporary or permanent clinical hold by regulatory agencies for a number of reasons, including after review of an IND application or amendment, or equivalent application or amendment; as a result of a new safety finding that presents unreasonable risk to clinical trial participants; a negative finding from an inspection of our clinical study operations or study sites; developments on trials conducted by competitors for related technology that raises FDA concerns about risk to patients of the technology broadly; or if FDA finds that the investigational protocol or plan is clearly deficient to meet its stated objectives;
- delays in recruiting suitable patients to participate in our clinical studies;
- difficulty collaborating with patient groups and investigators;
- failure by our CROs, other third parties or us to adhere to clinical study requirements;
- failure to perform in accordance with the FDA's good clinical practice (GCP) requirements or applicable regulatory guidelines in other countries;
- transfer of manufacturing processes to any new CMO or our own manufacturing facilities or any other development or commercialization partner for the manufacture of product candidates;
- delays in having patients complete participation in a study or return for post-treatment follow-up;
- patients dropping out of a study;
- occurrence of adverse events associated with the product candidate that are viewed to outweigh its potential benefits;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- changes in the standard of care on which a clinical development plan was based, which may require new or additional trials;
- the cost of clinical studies of our product candidates being greater than we anticipate;

- clinical studies of our product candidates producing negative or inconclusive results, which may result in our deciding, or regulators requiring us, to conduct additional clinical studies or abandon product development programs;
- delays or failure to secure supply agreements with suitable raw material suppliers, or any failures by suppliers to meet our quantity or quality requirements for necessary raw materials, including due to suppliers prioritizing COVID-19 specific treatments or vaccines; and
- delays in manufacturing, testing, releasing, validating, or importing/exporting sufficient stable quantities of our product candidates for use in clinical studies or the inability to do any of the foregoing, including due to our CMOs or other vendors prioritizing COVID-19 specific treatments or vaccines.

The COVID-19 pandemic may also increase the risk of certain of the events described above and delay our development timelines. Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenue. In addition, if we make manufacturing or formulation changes to our product candidates, we may be required to or we may elect to conduct additional studies to bridge our modified product candidates to earlier versions. Clinical study delays could also shorten any periods during which our products have patent protection and may allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business and results of operations.

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

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

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

We may experience difficulties in patient enrollment in our clinical trials for a variety of reasons. The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the study until its conclusion. The COVID-19 pandemic, including the travel and business restrictions imposed by government authorities in response to the pandemic, have resulted in, and may continue to cause, reduced enrollment and may also create challenges to related clinical trial activities. In addition, the enrollment of patients depends on many factors, including:

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

Since we only need to conduct a limited number of manufacturing runs to generate clinical supply, the diversity of our supply is limited during clinical trials. As a result, some patients may have antibodies to certain donor specific antigens that may interact with our product candidates, which would render the patients ineligible for treatment.

In addition, prior treatment with rituximab may interfere with ALLO-501 as ALLO-501 contains rituximab recognition domains. Since rituximab is a typical part of a treatment regimen for a patient with NHL, patient eligibility for the ALLO-501 trial may be limited. Patients may also undergo plasmapheresis to remove rituximab prior to infusion of ALLO-501, which may cause separate adverse effects. We have removed the rituximab recognition domains in the second generation of ALLO-501, known as ALLO-501A, which we believe will potentially facilitate treatment of patients who were recently treated with rituximab. However, ALLO-501A may not behave as expected and may be challenging to develop or manufacture.

Our clinical trials will also compete with other clinical trials for product candidates that are in the same therapeutic areas as our product candidates, and this competition will reduce the number and types of patients available to us because some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Since the number of qualified clinical investigators is limited, some of our clinical trial sites are also being used by some of our competitors, which may reduce the number of patients who are available for our clinical trials in that clinical trial site.

Moreover, because our product candidates represent a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy and hematopoietic cell transplantation or autologous CAR T cell therapies, rather than enroll patients in our clinical trial, including if our product candidates have or are perceived to have additional safety or efficacy risks or if using our product candidates may affect insurance coverage of conventional therapies. Patients eligible for allogeneic CAR T cell therapies but ineligible for autologous CAR T cell therapies due to aggressive cancer and inability to wait for autologous CAR T cell therapies may be at greater risk for complications and death from therapy.

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

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

The FDA often approves new therapies initially only for use in patients with R/R metastatic disease. We expect to initially seek approval of our product candidates in this setting. Subsequently, for those products that prove to be sufficiently beneficial, if any, we would expect to seek approval in earlier lines of treatment. There is no guarantee that our product candidates, even if approved, would be approved for earlier lines of therapy, and, prior to any such approvals, we will have to conduct additional clinical trials, including potentially comparative trials against approved therapies. We are also targeting a similar patient population as autologous CAR T product candidates, including approved autologous CAR T products. Our therapies may not be as safe and effective as autologous CAR T therapies and may only be approved for patients who are ineligible for autologous CAR T therapy.

Our projections of both the number of patients who have the cancers we are targeting, as well as the subset of patients with these cancers in a position to receive second or later lines of therapy and who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations, or market research and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these cancers. The number of patients may turn out to be lower than expected. Additionally, the potentially addressable patient population for our product candidates may be limited or may not be amenable to treatment with our product candidates. For instance, we expect ALLO-501A to initially target a small patient population that suffers from R/R NHL. Even if we obtain significant market share for our product candidates, because the potential target populations are small, we may never achieve profitability without obtaining regulatory approval for additional indications.

Our development strategy relies on incorporating an anti-CD52 monoclonal antibody as part of the lymphodepletion preconditioning regimen prior to infusing allogeneic CAR T cell product candidates.

We utilize an anti-CD52 monoclonal antibody as part of a lymphodepletion regimen to be infused prior to infusing our product candidates. While we believe an anti-CD52 antibody may be able to reduce the likelihood of a patient's immune system rejecting the engineered allogeneic T cells for a sufficient period of time to enable a window of persistence during which such engineered allogeneic T cells can actively target and destroy cancer cells, the antibody may not have the benefits that we anticipate and could have adverse effects. For instance, our lymphodepletion regimen, including using an anti-CD52 antibody, will cause a transient and sometimes prolonged immune suppression that is associated with an increased risk of infection, such as to COVID-19, that may be unable to be cleared by the patient and ultimately lead to death.

In the prior CALM and PALL trials, a commercially available monoclonal antibody, alemtuzumab, that binds CD52 was used. Alemtuzumab is known to have risk of causing certain adverse events. In 2020, the EMA completed a pharmacovigilance review of alemtuzumab in the context of the treatment of multiple sclerosis following reports of immune-mediated conditions and problems affecting the heart and blood vessels, including fatal cases. The EMA recommended that alemtuzumab should not be used in patients with certain heart, circulation or bleeding disorders or in patients who have autoimmune disorders other than multiple sclerosis. The EMA also recommended that alemtuzumab only be given in a hospital with ready access to intensive care facilities and specialists who can manage serious adverse reactions. Based on the recommendations, we have added relevant new safety information to certain of our clinical trial documentation, including informed consent forms. Our product candidates will also continue to be administered at specialized centers, which are experienced at managing patients with advanced malignancies as well as toxicities associated with immunomodulatory therapies. We will continue to monitor any new safety information that will be reported or added to the product labels of alemtuzumab. If the EMA or other regulatory agencies further limit the use of alemtuzumab or anti-CD52 antibodies, our clinical program would be adversely affected.

To secure our own readily available source of anti-CD52 antibody, we are developing our own monoclonal anti-CD52 antibody, ALLO-647, which we are using in our clinical trials. ALLO-647 may cause serious adverse events that alemtuzumab may cause, including fatal adverse events, immune thrombocytopenia, glomerular nephropathies, thyroid disorders, autoimmune cytopenias, autoimmune hepatitis, hemophagocytic lymphohistiocytosis, acquired hemophilia and infections, stroke, and progressive multifocal leukoencephalopathy. In addition, we are exploring various dosing strategies for lymphodepletion in our clinical trials, such as higher and lower dosing of ALLO-647 in combination with fludarabine and cyclophosphamide, which may increase the risk of serious adverse events. See "Business--Product Pipeline and Development Strategy" for information on safety events.

If we are unable to successfully develop and manufacture ALLO-647 in the timeframe we anticipate, or at all, or if regulatory authorities do not approve the use of ALLO-647 in combination with our allogeneic T cell product candidates, we may be unable to source alemtuzumab and our engineered allogeneic T cell product candidates may be less effective, which could result in delays in our product development efforts and/or the commercial potential of our product candidates.

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

We may not be able to achieve clinical or commercial manufacturing and cell processing on our own or at our CMO, including mass-producing off-the-shelf product to satisfy demands for any of our product candidates. While we believe the manufacturing and processing approaches are appropriate to support our clinical product development, we have limited experience in managing the allogeneic T cell engineering process, and our allogeneic processes may be more difficult or more expensive than the approaches taken by our competitors. We cannot be sure that the manufacturing processes employed by us or the technologies that we incorporate for manufacturing will result in T cells that will be safe and effective.

In February 2019, we entered into a lease for approximately 118,000 square feet to develop a state-of-the-art cell therapy manufacturing facility in Newark, California. While we expect to initiate manufacturing under current good manufacturing practices (cGMP) in 2021, any business interruptions or delays to our validation or commissioning efforts, securing equipment and raw materials, or obtaining appropriate regulatory or licensing approvals, in each case which may be more likely as a result of the COVID-19 pandemic, will delay our manufacturing timelines.

Any changes in manufacturing of our product candidates currently in the clinic, including introducing product candidates manufactured at our facility into any ongoing clinical trials, will require that we meet certain regulatory conditions, such as establishing comparability with the product candidates manufactured at our CMO, and our inability to meet such conditions may result in a delay in using our manufacturing facility for production or extend our clinical trial timelines.

We also do not yet have sufficient information to reliably estimate the cost of the clinical and commercial manufacturing and processing of our product candidates, and the actual cost to manufacture and process our product candidates could materially and adversely affect the commercial viability of our product candidates. In addition, the ultimate clinical and any commercial dose and treatment regimen will affect our ability to scale and our costs per dose. For instance, because ALLO-715 may require a higher dose than ALLO-501A, it is possible that it may be more difficult to scale ALLO-715 production to meet any demand. As a result, we may never be able to develop a commercially viable product. The commercial manufacturing facility we build will also require FDA approval, which we may never obtain. Even if approved, we would be subject to ongoing periodic unannounced inspection by the FDA, the Drug Enforcement Administration and corresponding state agencies to ensure strict compliance with cGMP, and other government regulations.

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

We, our CMOs or any other of our or their vendors may fail to manage the logistics of storing and shipping our raw materials and product candidates. Storage failures and shipment delays and problems caused by us, our vendors or other factors not in our control, such as weather, could result in the inability to manufacture product, the loss of usable product or prevent or delay the delivery of product candidates to patients.

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

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

We currently have no sales, marketing or distribution capabilities and as a company have no experience in marketing products. We intend to develop an in-house marketing organization and sales force, which will require significant capital expenditures, management resources and time. We will have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train and retain marketing and sales personnel.

If we are unable or decide not to establish internal sales, marketing and distribution capabilities, we will pursue collaborative arrangements regarding the sales and marketing of our products; however, there can be no assurance that we will be able to establish or maintain such collaborative arrangements, or if we are able to do so, that they will have effective sales forces. Any revenue we receive will depend upon the efforts of such third parties, which may not be successful. We may have little or no control over the marketing and sales efforts of such third parties and our revenue from product sales may be lower than if we had commercialized our product candidates ourselves. We also face competition in our search for third parties to assist us with the sales and marketing efforts of our product candidates.

There can be no assurance that we will be able to develop in-house sales and distribution capabilities or establish or maintain relationships with third-party collaborators to commercialize any product that receives regulatory approval in the United States or in other markets.

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

We plan to globally develop our product candidates. Accordingly, we expect that we will be subject to additional risks related to operating in foreign countries, including:

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

- foreign currency fluctuations, which could result in increased operating expenses and reduced revenue, and other obligations incident to doing business in another country;
- difficulties staffing and managing foreign operations;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- differing payor reimbursement regimes, governmental payors or patient self-pay systems, and price controls;
- potential liability under the Foreign Corrupt Practices Act of 1977 or comparable foreign regulations;
- challenges enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- production shortages resulting from any events affecting raw material supply or manufacturing capabilities abroad; and
- business interruptions resulting from the COVID-19 pandemic or other natural or man-made disasters, including earthquakes, tsunamis, fires or other medical epidemics, or geo-political actions, including war and terrorism.

These and other risks associated with our collaborations with Servier and Cellectis, each based in France, our collaboration with Notch Therapeutics Inc. (Notch), based in Canada, and our joint venture for China, Taiwan, South Korea and Singapore with Overland Pharmaceuticals (CY) Inc., may materially adversely affect our ability to attain or maintain profitable operations.

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

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

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

We are highly dependent on our key personnel, and if we are not successful in attracting and retaining highly qualified personnel, we may not be able to successfully implement our business strategy.

Our ability to compete in the highly competitive biotechnology and pharmaceutical industries depends upon our ability to attract and retain highly qualified managerial, scientific and medical personnel. We are highly dependent on our management, scientific and medical personnel, including our Executive Chair, our President and Chief Executive Officer, our Chief Financial Officer, our Executive Vice President of Research & Development and Chief Medical Officer, our Chief Technical Officer, and our General Counsel. The loss of the services of any of our executive officers, other key employees, and other scientific and medical advisors, and our inability to find suitable replacements could result in delays in product development and harm our business.

We conduct substantially all of our operations at our facilities in South San Francisco. This region is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our market is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms or at all.

To induce valuable employees to remain at our company, in addition to salary and cash incentives, we have provided stock options and restricted stock unit (RSU) awards that vest over time. The value to employees of stock options and RSU awards that vest over time may be significantly affected by movements in our stock price that are beyond our control and may at any time be insufficient to counteract more lucrative offers from other companies. Despite our efforts to retain valuable employees, members of our management, scientific and development teams may terminate their employment with us on short notice. Although we have employment agreements with our key employees, these employment agreements provide for at-will employment, which means that any of our employees could leave our employment at any time, with or without notice. We do not maintain "key person" insurance policies on the lives of these individuals or the lives of any of our other employees. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level and senior managers as well as junior, mid-level and senior scientific and medical personnel.

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

As of February 1, 2021, we had 265 full-time employees. As our development, manufacturing and commercialization plans and strategies develop, we have rapidly expanded our employee base and expect to add managerial, operational, sales, research and development, marketing, financial and other personnel. Current and future growth imposes significant added responsibilities on members of management, including:

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

Our future financial performance and our ability to commercialize our product candidates will depend, in part, on our ability to effectively manage our growth, and our management may also have to divert a disproportionate amount of its attention away from day-to-day activities in order to devote a substantial amount of time to managing these growth activities. Our ability to build our organization and manage our employees has also been affected by the COVID-19 pandemic, as our staff are working from home, except for a limited number primarily working in our laboratories and manufacturing facility. The effects of the stay-at-home orders and our work-from-home policies may negatively impact productivity, disrupt our business and delay our development programs, regulatory and commercialization timelines, the magnitude of which will depend, in part, on the length and severity of the restrictions and other limitations on our ability to conduct our business in the ordinary course.

We currently rely, and for the foreseeable future will continue to rely, in substantial part on certain independent organizations, advisors and consultants. There can be no assurance that the services of independent organizations, advisors and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements. We may also be subject to penalties or other liabilities if we mis-classify employees as consultants. In addition, if we are unable to effectively manage our outsourced activities or if the quality or accuracy of the services provided by consultants is compromised for any reason, our clinical trials may be extended, delayed or terminated, and we may not be able to obtain regulatory approval of our product candidates or otherwise advance our business. There can be no assurance that we will be able to manage our existing consultants or find other competent outside contractors and consultants on economically reasonable terms, or at all.

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

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

We may form or seek additional strategic alliances, create joint ventures or collaborations or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop. Any of these relationships may require us to incur non-recurring and other charges, increase our near and long-term expenditures, issue

securities that dilute our existing stockholders or disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy. Any delays in entering into new strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies for certain indications, which would harm our business prospects, financial condition and results of operations.

If we license products or acquire businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. For instance, our agreements with Cellectis, Servier, Notch and SpringWorks require significant research and development that may not result in the development and commercialization of product candidates. We cannot be certain that, following a strategic transaction or license, we will achieve the results, revenue or specific net income that justifies such transaction.

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

We actively evaluate various strategic transactions on an ongoing basis. We may acquire other businesses, products or technologies as well as pursue joint ventures or investments in complementary businesses. The success of our strategic transactions, including our acquisition of CAR T cell assets from Pfizer, licenses with Cellectis, Servier and Notch, joint venture with Overland Pharmaceuticals (CY) Inc. and any future strategic transactions depends on the risks and uncertainties involved including:

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

If any of these risks or uncertainties occur, we may not realize the anticipated benefit of any acquisition or strategic transaction.

Additionally, foreign acquisitions and joint ventures are subject to additional risks, including those related to integration of operations across different cultures and languages, currency risks, potentially adverse tax consequences of overseas operations and the particular economic, political and regulatory risks associated with specific countries. For instance, our joint venture with Overland Pharmaceuticals (CY) Inc. may face difficulties manufacturing or delivering our licensed product candidates in China, Taiwan, South Korea or Singapore, which could prevent any development or commercialization of our licensed product candidates in the region. The joint venture will also require significant financial support in the future by us or third parties, and any future financing of the joint venture would increase our expenses or dilute our ownership in the joint venture.

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

We will need substantial additional financing to develop our products and implement our operating plans. If we fail to obtain additional financing, we may be unable to complete the development and commercialization of our product candidates.

We expect to spend a substantial amount of capital in the development and manufacture of our product candidates. We will need substantial additional financing to develop our products and implement our operating plans. In particular, we will require substantial additional financing to enable commercial production of our products and initiate and complete registration

trials for multiple products in multiple regions. Further, if approved, we will require significant additional amounts in order to launch and commercialize our product candidates.

As of December 31, 2020, we had $1.0 billion in cash, cash equivalents and investments. Changing circumstances may cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than currently expected because of circumstances beyond our control. We may also need to raise additional capital sooner than we currently anticipate if we choose to expand more rapidly than we presently plan. In any event, we will require additional capital for the further development and commercialization of our product candidates, including funding our internal manufacturing capabilities.

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

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

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

Our internal computer systems and those of our CROs, collaborators, and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, cybersecurity threats, and telecommunication and electrical failures. In addition, the COVID-19 pandemic has intensified our dependence on information technology systems as many of our critical business activities are currently being conducted remotely. A successful cyberattack could result in the theft or destruction of intellectual property, data, or other misappropriation of assets, financial loss or otherwise compromise our confidential or proprietary information and disrupt our operations. Any failure to prevent or mitigate security breaches or improper access to, use of, or disclosure of our clinical data or patients' personal data could result in significant liability under state, federal, and international law and may cause a material adverse impact to our reputation, affect our ability to conduct our clinical trials and potentially disrupt our business.

Cyberattacks are increasing in their frequency, sophistication and intensity, and have become increasingly difficult to detect. Cyberattacks could include wrongful conduct by hostile foreign governments, industrial espionage, wire fraud and other forms of cyber fraud, the deployment of harmful malware, denial-of-service, social engineering fraud or other means to threaten data security, confidentiality, integrity and availability. Although we devote resources to protect our information systems, we realize that cyberattacks are a threat, and there can be no assurance that our efforts will prevent information security breaches that would result in business, legal, financial or reputational harm to us, or would have a material adverse effect on our results of operations and financial condition. In addition, failure to maintain effective internal accounting controls related to security breaches and cybersecurity in general could impact our ability to produce timely and accurate financial statements and subject us to regulatory scrutiny. Any failure by third-party providers to prevent or mitigate security breaches or improper access to or disclosure of such information could have similarly adverse consequences for us.

Changes in funding for the FDA, the SEC and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel and accept payment of user fees, statutory, regulatory and policy changes, and business disruptions, such as those caused by the COVID-19 pandemic. Average review times at the agency have fluctuated in recent years as a result. In addition, government funding of the SEC and other government agencies on which our operations may rely, including those that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for new drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several

years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business. Further, future government shutdowns could impact our ability to access the public markets and obtain necessary capital in order to properly capitalize and continue our operations.

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

In addition to the business disruptions caused by the COVID-19 pandemic or cybersecurity attacks described above, our operations, and those of our CMOs, CROs, clinical trial sites and other contractors and consultants, could be subject to other disruptions, including those caused by earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

Our ability to manufacture our product candidates could be disrupted if our operations or those of our suppliers are affected by a man-made or natural disaster or other business interruption. Our corporate headquarters and manufacturing facility are located in California near major earthquake faults and fire zones. The ultimate impact on us, our significant suppliers and our general infrastructure of being located near major earthquake faults and fire zones and being consolidated in certain geographical areas is unknown, but our operations and financial condition could suffer in the event of a major earthquake, fire or other natural disaster.

Our relationships with customers, physicians, and third-party payors are subject, directly or indirectly, to federal, state, local and foreign healthcare fraud and abuse laws, false claims laws, health information privacy and security laws, and other healthcare laws and regulations. If we or our employees, independent contractors, consultants, commercial partners and vendors violate these laws, we could face substantial penalties.

These laws may impact, among other things, our clinical research program, as well as our proposed and future sales, marketing and education programs. In particular, the promotion, sales and marketing of healthcare items and services is subject to extensive laws and regulations designed to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive and other business arrangements. We may also be subject to federal, state and foreign laws governing the privacy and security of identifiable patient information. If our operations are found to be in violation of any of these laws that apply to us, we may be subject to significant civil, criminal and administrative penalties.

European data collection is governed by restrictive regulations governing the use, processing, and cross-border transfer of personal information.

The collection and use of personal data in the European Union (EU) are governed by the General Data Protection Regulation (GDPR). The GDPR imposes stringent requirements for controllers and processors of personal data, including, for example, more robust disclosures to individuals and a strengthened individual data rights regime, shortened timelines for data breach notifications, limitations on retention of information, increased requirements pertaining to special categories of data, such as health data, and additional obligations when we contract with third-party processors in connection with the processing of the personal data. The GDPR also imposes strict rules on the transfer of personal data out of the European Union to the United States and other third countries. In addition, the GDPR provides that EU member states may make their own further laws and regulations limiting the processing of personal data, including genetic, biometric or health data.

The GDPR applies extraterritorially, and we may be subject to the GDPR because of our data processing activities that involve the personal data of individuals located in the European Union, such as in connection with our EU clinical trials. Failure to comply with the requirements of the GDPR and the applicable national data protection laws of the EU member states may result in fines of up to €20,000,000 or up to 4% of the total worldwide annual turnover of the preceding financial year, whichever is higher, and other administrative penalties. GDPR regulations may impose additional responsibility and liability in relation to the personal data that we process and we may be required to put in place additional mechanisms to ensure compliance with the new data protection rules. This may be onerous and may interrupt or delay our development activities, and adversely affect our business, financial condition, results of operations and prospects.

Additionally, California recently enacted legislation that has been dubbed the first “GDPR-like” law in the United States. Known as the California Consumer Privacy Act (CPPA), it creates new individual privacy rights for consumers (as that word is broadly defined in the law) and places increased privacy and security obligations on entities handling personal data of

consumers or households. The CCPA requires covered companies to provide new disclosures to California consumers, provide such consumers new ways to opt-out of certain sales of personal information, and allow for a new cause of action for data breaches. As our business progresses, the CCPA may become applicable and significantly impact our business activities and exemplifies the vulnerability of our business to evolving regulatory environment related to personal data and protected health information.

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

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

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

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

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

Under the Tax Act, as modified by the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), federal net operating losses incurred in tax years beginning after December 31, 2017, may be carried forward indefinitely, but the deductibility of such federal net operating losses in tax years beginning after December 31, 2020, is limited to 80% of taxable income. It is uncertain if and to what extent various states will conform to the Tax Act or the CARES Act. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, and corresponding provisions of state law, if a corporation undergoes an "ownership change" (generally defined as a greater than 50 percentage point change (by value) in the equity ownership of certain stockholders over a rolling three-year period), the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. As a result of our IPO in October 2018 and private placements and other transactions that have occurred since our incorporation, we may have experienced an "ownership change". We may also experience ownership changes in the future as a result of subsequent shifts in our stock ownership. We anticipate incurring significant additional net losses for the foreseeable future, and our ability to utilize net operating loss carryforwards associated with any such losses to offset future taxable income may be limited to the

extent we incur future ownership changes. In addition, at the state level, there may be periods during which the use of net operating loss carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California recently imposed limits on the usability of California state net operating losses to offset taxable income in tax years beginning after 2019 and before 2023. As a result, we may be unable to use all or a material portion of our net operating loss carryforwards and other tax attributes, which could adversely affect our future cash flows.

Risks Related to Our Reliance on Third Parties

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

We depend and will continue to depend upon independent investigators and collaborators, such as universities, medical institutions, CROs and strategic partners to conduct our preclinical and clinical trials under agreements with us.

We negotiate budgets and contracts with CROs and study sites, which may result in delays to our development timelines and increased costs. We will rely heavily on these third parties over the course of our clinical trials, and we control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with applicable protocol, legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with good clinical practices (GCPs), which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for product candidates in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of these third parties fail to comply with applicable GCP regulations, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that, upon inspection, such regulatory authorities will determine that any of our clinical trials comply with the GCP regulations. In addition, our clinical trials must be conducted with biologic product produced under cGMPs and will require a large number of test patients. Our failure or any failure by these third parties to comply with these regulations or to recruit a sufficient number of patients may require us to repeat clinical trials, which would delay the regulatory approval process. Moreover, our business may be implicated if any of these third parties violates federal or state fraud and abuse or false claims laws and regulations or healthcare privacy and security laws.

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

If any of our relationships with trial sites, or any CRO that we may use in the future, terminates, we may not be able to enter into arrangements with alternative trial sites or CROs or do so on commercially reasonable terms. Switching or adding third parties to conduct our clinical trials involves substantial cost and requires extensive management time and focus. In addition, there is a natural transition period when a new third party commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines.

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

Our product candidates are manufactured in the United States by our CMOs, and we manage all other aspects of the supply, including planning, CMO oversight, disposition and distribution logistics. In the past, Servier was responsible for UCART19 manufacturing, and experienced UCART19 supply issues that limited its ability to recruit new patients in the past. There can be no assurance that we will not experience supply or manufacturing issues in the future.

While we are in the process of developing our own manufacturing facility for cell therapies, we must currently rely on outside vendors to manufacture supplies and process our product candidates. We do not have long-term agreements in place with CMOs for the manufacture of our cell therapies or of ALLO-647. If we are unable to contract with CMOs on acceptable terms or at all, our clinical development program would be delayed and our business would be significantly harmed.

We have not yet caused our product candidates to be manufactured or processed on a commercial scale and may not be able to achieve manufacturing and processing and may be unable to create an inventory of mass-produced, off-the-shelf product to satisfy demands for any of our product candidates.

We do not yet have sufficient information to reliably estimate the cost of the commercial manufacturing and processing of our product candidates, and the actual cost to manufacture and process our product candidates could materially and adversely affect the commercial viability of our product candidates. As a result, we may never be able to develop a commercially viable product.

In addition, our anticipated reliance on a limited number of third-party manufacturers exposes us to the following risks:

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

Our contract manufacturers would also be subject to the same risks we face in developing our own manufacturing capabilities, as described above. For instance, our CMOs may be required to shutdown in response to the spread of COVID-19. In addition, our CMOs have certain responsibilities for storage of raw materials and in the past have lost or failed to adequately store our raw materials. Any additional or future damage or loss of raw materials could materially impact our ability to manufacture and supply our product candidates. Each of these risks could delay our clinical trials, the approval, if any of our product candidates by the FDA or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenue. In addition, we will rely on third parties to perform release tests on our product candidates prior to delivery to patients. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm.

We rely on donors of T cells to manufacture our product candidates, and if we do not obtain an adequate supply of T cells from qualified donors, development of those product candidates may be adversely impacted.

Unlike autologous CAR T companies, we are reliant on receiving healthy donor material to manufacture our product candidates. Healthy donor T cells vary in type and quality, and this variation makes producing standardized product candidates more difficult and makes the development and commercialization pathway of those product candidates more uncertain. We have developed a screening process designed to enhance the quality and consistency of T cells used in the manufacture of our CAR T cell product candidates, but our screening process may fail to identify suitable donor material and we may discover failures with the material after production. We may also have to update our specifications for new risks that may emerge, such as to screen for new viruses.

We have strict specifications for donor material, which include specifications required by regulatory authorities. If we are unable to identify and obtain donor material that satisfy specifications, agree with regulatory authorities on appropriate specifications, or address variability in donor T cells, there may be inconsistencies in the product candidates we produce or we may be unable to initiate or continue ongoing clinical trials on the timelines we expect, which could harm our reputation and adversely impact our business and prospects.

In addition, vendors have in the past been unable to secure donor material during the COVID-19 pandemic due to government restrictions on business activity and travel. While we have donor material on hand, and our vendors are currently able to provide us with donor material, if the COVID-19 pandemic continues and our vendors are unable to secure donor material, we may no longer have sufficient donor material to manufacture our product candidates.

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

Our product candidates require many specialty raw materials, including viral vectors that deliver the CAR sequence and electroporation technology, some of which are manufactured by small companies with limited resources and experience to support a commercial product, and the suppliers may not be able to deliver raw materials to our specifications. We do not have contracts with many of the suppliers, and we may not be able to contract with them on acceptable terms, or at all. Many suppliers have curtailed their operations during the COVID-19 pandemic or focused their operations on supporting COVID-19 therapies and vaccines, and our ability to source raw materials has been impacted. Accordingly, we may experience delays in receiving, or fail to secure entirely, key raw materials to support clinical or commercial manufacturing. Certain raw materials also require third-party testing, and some of the testing service companies may not have capacity or be able to conduct the testing that we request.

In addition, many of our suppliers normally support blood-based hospital businesses and generally do not have the capacity to support commercial products manufactured under cGMP by biopharmaceutical firms. The suppliers may be ill-equipped to support our needs, especially in non-routine circumstances like an FDA inspection or medical crisis, such as widespread contamination. We also face competition for supplies from other cell therapy companies. Such competition may make it difficult for us to secure raw materials or the testing of such materials on commercially reasonable terms or in a timely manner.

Some raw materials are currently available from a single supplier, or a small number of suppliers. We cannot be sure that these suppliers will remain in business or that they will not be purchased by one of our competitors or another company that is not interested in continuing to produce these materials for our intended purpose. In addition, the lead time needed to establish a relationship with a new supplier can be lengthy, and we may experience delays in meeting demand in the event we must switch to a new supplier. The time and effort to qualify a new supplier, including to meet any regulatory requirements for such qualification, could result in additional costs, diversion of resources or reduced manufacturing yields, any of which would negatively impact our operating results. Further, we may be unable to enter into agreements with a new supplier on commercially reasonable terms, which could have a material adverse impact on our business.

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

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

Risks Related to Government Regulation

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

The research, testing, manufacturing, labeling, approval, selling, import, export, marketing, and distribution of drug products, including biologics, are subject to extensive regulation by the FDA and other regulatory authorities in the United States. We are not permitted to market any biological drug product in the United States until we receive approval of a biologics license application (BLA) from the FDA. We have not previously submitted a BLA to the FDA, or similar approval filings to comparable foreign authorities. A BLA must include extensive preclinical and clinical data and supporting information to establish the product candidate's safety and effectiveness for each desired indication. The BLA must also include significant information regarding the chemistry, manufacturing and controls for the product.

We expect the novel nature of our product candidates to create further challenges in obtaining regulatory approval. For example, the FDA has limited experience with commercial development of allogeneic T cell therapies for cancer. We may also request regulatory approval of future CAR-based product candidates by target, regardless of cancer type or origin, which the FDA may have difficulty accepting if our clinical trials only involved cancers of certain origins. The FDA may also require a panel of experts, referred to as an Advisory Committee, to deliberate on the adequacy of the safety and efficacy data to support licensure. The opinion of the Advisory Committee, although not binding, may have a significant impact on our ability to obtain licensure of the product candidates based on the completed clinical trials, as the FDA often adheres to the Advisory Committee's recommendations. Accordingly, the regulatory approval pathway for our product candidates may be uncertain, complex, expensive and lengthy, and approval may not be obtained.

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

- obtaining regulatory authorization to begin a trial, if applicable;
- the availability of financial resources to commence and complete the planned trials;
- reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- obtaining approval at each clinical trial site by an independent IRB;
- obtaining regulatory and other approvals to modify the conduct of a clinical trial;
- recruiting suitable patients to participate in a trial;
- having patients complete a trial, including having patients enrolled in clinical trials dropping out of the trial before the product candidate is manufactured and returned to the site, or return for post-treatment follow-up;
- clinical trial sites deviating from trial protocol or dropping out of a trial;
- addressing any patient safety concerns that arise during the course of a trial;
- adding new clinical trial sites; or
- manufacturing sufficient quantities of qualified materials under cGMPs and delivering product candidates for use in clinical trials.

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

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

We expect the product candidates we develop will be regulated as biological products, or biologics, and therefore they may be subject to competition sooner than anticipated.

The Biologics Price Competition and Innovation Act of 2009 (BPCIA) was enacted as part of the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010 (collectively, the Affordable Care Act) to establish an abbreviated pathway for the approval of biosimilar and interchangeable biological products. The 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 approved biologic. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the reference product was approved under a BLA. The law is complex and is still being interpreted and implemented by the FDA. As a result, its ultimate impact, implementation, and meaning are subject to uncertainty and could have a material adverse effect on the future commercial prospects for our biological products.

We believe that any of the product candidates we develop that is approved in the United States as a biological product under a BLA should qualify for the 12-year period of exclusivity. However, there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider the subject product candidates to be reference products for competing products, potentially creating the opportunity for generic competition sooner than anticipated. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of the reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

The regulatory landscape that will govern our product candidates is uncertain; regulations relating to more established gene therapy and cell therapy products are still developing, and changes in regulatory requirements could result in delays or discontinuation of development of our product candidates or unexpected costs in obtaining regulatory approval.

Because we are developing novel CAR T cell immunotherapy product candidates that are unique biological entities, the regulatory requirements that we will be subject to are not entirely clear. Even with respect to more established products that fit into the categories of gene therapies or cell therapies, the regulatory landscape is still developing. For example, regulatory requirements governing gene therapy products and cell therapy products have changed frequently and may continue to change in the future. Moreover, there is substantial, and sometimes uncoordinated, overlap in those responsible for regulation of existing gene therapy products and cell therapy products. For example, in the United States, the FDA has established the Office of Tissues and Advanced Therapies (OTAT), formerly known as the Office of Cellular, Tissue and Gene Therapies (OCTGT), within its Center for Biologics Evaluation and Research (CBER) to consolidate the review of gene therapy and related products, and the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review. Gene therapy clinical trials are also subject to review and oversight by an institutional biosafety committee (IBC), a local institutional committee that reviews and oversees basic and clinical research conducted at the institution participating in the clinical trial. Although the FDA decides whether individual gene therapy protocols may proceed, review process and determinations of other reviewing bodies can impede or delay the initiation of a clinical study, even if the FDA has reviewed the study and approved its initiation. Conversely, the FDA can place an IND application on clinical hold even if such other entities have provided a favorable review. Furthermore, each clinical trial must be reviewed and approved by an independent IRB at or servicing each institution at which a clinical trial will be conducted. In addition, adverse developments in clinical trials of gene therapy products conducted by others may cause the FDA or other regulatory bodies to change the requirements for approval of any of our product candidates.

Complex regulatory environments exist in other jurisdictions in which we might consider seeking regulatory approvals for our product candidates, further complicating the regulatory landscape. For example, in the EU a special committee called the Committee for Advanced Therapies (CAT) was established within the EMA in accordance with Regulation (EC) No 1394/2007 on advanced-therapy medicinal products (ATMPs) to assess the quality, safety and efficacy of ATMPs, and to follow scientific developments in the field. ATMPs include gene therapy products as well as somatic cell therapy products and tissue engineered products. In this regard, on May 28, 2014, the EMA issued a recommendation that UCART19 be considered a gene therapy product under Regulation (EC) No 1394/2007 on ATMPs. We believe our other product candidates may receive a similar recommendation.

These various regulatory review committees and advisory groups and new or revised guidelines that they promulgate from time to time may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. Because the regulatory landscape for our CAR T cell immunotherapy product candidates is new, we may face even more cumbersome and complex regulations than those emerging for gene therapy products and cell therapy products. Furthermore, even if our product candidates obtain

required regulatory approvals, such approvals may later be withdrawn as a result of changes in regulations or the interpretation of regulations by applicable regulatory agencies.

Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue to maintain our business.

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

If and when our ongoing and planned Phase 1 clinical trials are completed and, assuming positive data, we expect to advance to potential registrational trials. The general approach for FDA approval of a new biologic or drug is for the sponsor to provide dispositive data from two well-controlled, Phase 3 clinical studies of the relevant biologic or drug in the relevant patient population. Phase 3 clinical studies typically involve hundreds of patients, have significant costs and take years to complete. We expect registrational trials for ALLO-501A and ALLO-715 to be designed to evaluate the efficacy of the product candidate in an open-label, non-comparative, two-stage, pivotal, multicenter, single-arm clinical trial in patients who have exhausted available treatment options. If the results are sufficiently compelling, we intend to discuss with the FDA submission of a BLA for the relevant product candidate. However, we do not have any agreement or guidance from the FDA that our regulatory development plans will be sufficient for submission of a BLA. For example, the FDA may require that we conduct a comparative trial against an approved therapy including potentially an approved autologous T cell therapy, which would significantly delay our development timelines and require substantially more resources. In addition, the FDA may only allow us to evaluate patients that have failed or who are ineligible for autologous therapy, which are extremely difficult patients to treat and patients with advanced and aggressive cancer, and our product candidates may fail to improve outcomes for such patients.

Given the molecular similarities between ALLO-501 and ALLO-501A, we may have additional difficulties progressing any clinical trial of ALLO-501A, if emerging data from the clinical trial of ALLO-501 have safety or other issues.

The FDA may grant accelerated approval for our product candidates and, as a condition for accelerated approval, the FDA may require a sponsor of a drug or biologic receiving accelerated approval to perform post-marketing studies to verify and describe the predicted effect on irreversible morbidity or mortality or other clinical endpoint, and the drug or biologic may be subject to withdrawal procedures by the FDA that are more accelerated than those available for regular approvals. We believe our accelerated approval strategy is warranted given the limited alternatives for patients with R/R cancers, but the FDA may ultimately require a Phase 3 clinical trial prior to approval, particularly since our product candidates represent a novel treatment. In addition, the standard of care may change with the approval of new products in the same indications that we are studying. This may result in the FDA or other regulatory agencies requesting additional studies to show that our product candidate is superior to the new products.

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

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that our product candidates are safe and effective for any of their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval, including due to the heterogeneity of patient populations;
- we may be unable to demonstrate that our product candidates' clinical and other benefits outweigh their safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA or comparable foreign regulatory authorities to support the submission of a BLA or other comparable submission in foreign jurisdictions or to obtain regulatory approval in the United States or elsewhere;
- the FDA or comparable foreign regulatory authorities will review our manufacturing process and inspect our commercial manufacturing facility and may not approve our manufacturing process or facility; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

We may be unable to obtain regulatory approval for ALLO-647 in a timely manner or at all, which could delay any approval or commercialization of our allogeneic T cell product candidates.

As we are concurrently developing ALLO-647 to be used as part of the lymphodepletion regimen for our allogeneic CAR T cell product candidates, mapping a path for dual approval of ALLO-647 and any of our CAR T cell product candidates and coordinating concurrent review with different divisions of the FDA create additional regulatory uncertainty for us and may delay the development of our product candidates. We expect the Center for Drug Evaluation and Research division of the FDA to exercise authority over the regulatory approval of ALLO-647 while the CBER division will oversee the regulatory approval of our allogeneic CAR T cell product candidates.

In addition, we expect regulatory authorities will require us to demonstrate the safety of ALLO-647 and its contribution to the overall benefit to risk ratio of the lymphodepletion regimen, including through a cohort of patients that do not receive ALLO-647. If we are unable to meet any of the requirements of the regulatory authorities, we may be required to conduct additional clinical studies. We cannot be certain we will be able to successfully obtain regulatory approval of ALLO-647 in a timely manner or at all. Any delays to ALLO-647 approval could delay any approval or commercialization of our allogeneic CAR T cell product candidates.

We plan to seek orphan drug designation for some or all of our product candidates across various indications, but we may be unable to obtain such designations or to maintain the benefits associated with orphan drug designation, including market exclusivity, which may cause our revenue, if any, to be reduced.

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biologic intended to treat a rare disease or condition, defined as a disease or condition with a patient population of fewer than 200,000 in the United States, or a patient population greater than 200,000 in the United States when there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States will be recovered from sales in the United States for that drug or biologic. In order to obtain orphan drug designation, the request must be made before submitting a BLA. In the United States, orphan drug designation entitles a party to financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages, and user-fee waivers. After the FDA grants orphan drug designation, the generic identity of the drug 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.

If a product that has orphan drug designation subsequently receives the first FDA approval of that particular product for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a BLA, to market the same biologic (meaning, a product with the same principal molecular structural features) for the same indication for seven years, except in limited circumstances such as a showing of clinical superiority to the product with orphan drug exclusivity or if FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. As a result, even if one of our product candidates receives orphan exclusivity, the FDA can still approve other biologics that do not have the same principal molecular structural features for use in treating the same indication or disease or the same biologic for a different indication or disease during the exclusivity period. Furthermore, the FDA can waive orphan exclusivity if we are unable to manufacture sufficient supply of our product or if a subsequent applicant demonstrates clinical superiority over our product.

We plan to seek orphan drug designation for some or all of our product candidates in specific orphan indications in which there is a medically plausible basis for the use of these products. Even if we obtain orphan drug designation, exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan designated indication and may be lost if the FDA later determines that the request for designation was materially defective or if we are unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition, or if a subsequent applicant demonstrates clinical superiority over our products, if approved. In addition, although we may seek orphan drug designation for other product candidates, we may never receive such designations.

Negative public opinion and increased regulatory scrutiny of genetic research and therapies involving gene editing may damage public perception of our product candidates or adversely affect our ability to conduct our business or obtain regulatory approvals for our product candidates.

The gene-editing technologies that we use are novel. Public perception may be influenced by claims that gene editing is unsafe, and products incorporating gene editing may not gain the acceptance of the public or the medical community. In particular, our success will depend upon physicians specializing in our targeted diseases prescribing our product candidates as treatments in lieu of, or in addition to, existing, more familiar, treatments for which greater clinical data may be available. Any increase in negative perceptions of gene editing may result in fewer physicians prescribing our treatments or may reduce the

willingness of patients to utilize our treatments or participate in clinical trials for our product candidates. In addition, given the novel nature of gene-editing and cell therapy technologies, governments may place import, export or other restrictions in order to retain control or limit the use of the technologies. For instance, any limits on exporting certain of our technology to China may adversely affect Allogene Overland Biopharm (CY) Limited (Allogene Overland), a joint venture established by us and Overland Pharmaceuticals (CY) Inc. Increased negative public opinion or more restrictive government regulations either in the United States or internationally, would have a negative effect on our business or financial condition and may delay or impair the development and commercialization of our product candidates or demand for such product candidates.

Even if we obtain regulatory approval of our product candidates, the products may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers and others in the medical community.

The use of engineered T cells as a potential cancer treatment is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers and others in the medical community. We expect physicians in the large bone marrow transplant centers to be particularly important to the market acceptance of our products and we may not be able to educate them on the benefits of using our product candidates for many reasons. For example, certain of the product candidates that we will be developing target a cell surface marker that may be present on cancer cells as well as non-cancerous cells. It is possible that our product candidates may kill these non-cancerous cells, which may result in unacceptable side effects, including death. Additional factors will influence whether our product candidates are accepted in the market, including:

- the clinical indications for which our product candidates are approved;
- physicians, hospitals, cancer treatment centers and patients considering our product candidates as a safe and effective treatment;
- the potential and perceived advantages of our product candidates over alternative treatments;
- the prevalence and severity of any side effects;
- product labeling or product insert requirements of the FDA or other regulatory authorities;
- limitations or warnings contained in the labeling approved by the FDA;
- the timing of market introduction of our product candidates as well as competitive products;
- the cost of treatment in relation to alternative treatments;
- the availability of coverage and adequate reimbursement by third-party payors and government authorities;
- the willingness of patients to pay out-of-pocket in the absence of coverage and adequate reimbursement by third-party payors and government authorities;
- relative convenience and ease of administration, including as compared to alternative treatments and competitive therapies; and
- the effectiveness of our sales and marketing efforts.

If our product candidates are approved but fail to achieve market acceptance among physicians, patients, hospitals, cancer treatment centers or others in the medical community, we will not be able to generate significant revenue. Even if our products achieve market acceptance, we may not be able to maintain that market acceptance over time if new products or technologies are introduced that are more favorably received than our products, are more cost effective or render our products obsolete.

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

Successful sales of our product candidates, if approved, depend on the availability of coverage and adequate reimbursement from third-party payors including governmental healthcare programs, such as Medicare and Medicaid, managed care organizations and commercial payors, among others. Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we obtain regulatory approval. In addition, because our product candidates represent new approaches to the treatment of cancer, we cannot accurately estimate the potential revenue from our product candidates.

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

The marketability of any product candidates for which we receive regulatory approval for commercial sale may suffer if government and other third-party payors fail to provide coverage and adequate reimbursement. We expect downward pressure on pharmaceutical pricing to continue. Further, coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

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

Third-party payors, whether domestic or foreign, or governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to the health care system that could impact our ability to sell our product candidates, if approved, profitably. In particular, in 2010 the Affordable Care Act was enacted. The Affordable Care Act and its implementing regulations, among other things, revised the methodology by which rebates owed by manufacturers to the state and federal government for covered outpatient drugs and certain biologics, including our product candidates, under the Medicaid drug rebate program are calculated, increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid drug rebate program, extended the Medicaid drug rebate program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations, subjected manufacturers to new annual fees and taxes for certain branded prescription drugs, and provided incentives to programs that increase the federal government's comparative effectiveness research. Additionally, the Affordable Care Act allowed states to implement expanded eligibility criteria for Medicaid programs, imposed a new Medicare Part D coverage gap discount program, expanded the entities eligible for discounts under the Public Health Service pharmaceutical pricing program and implemented a new Patient-Centered Outcomes Research Institute. There have been legal and political challenges to certain aspects of the Affordable Care Act. The U.S. Supreme Court is currently reviewing the constitutionality of the Affordable Care Act, but it is unknown when a decision will be reached. It is unclear how the Supreme Court ruling, other such litigation, and the healthcare reform measures of the Biden administration will impact the Affordable Care Act and our business.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our products. Such reforms could have an adverse effect on anticipated revenue from product candidates that we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates.

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

Risks Related to Our Intellectual Property

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

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

We depend substantially on our license agreements with Pfizer, Servier and Cellectis. These licenses may be terminated upon certain conditions. Any termination of these licenses could result in the loss of significant rights and could harm our ability to commercialize our product candidates. For example, we are dependent on our license with Cellectis for gene-editing technology that is necessary to produce our engineered T cells. In addition, we are reliant on Servier in-licensing from Cellectis some of the intellectual property rights they are licensing to us, including certain intellectual property rights relating to ALLO-501 and ALLO-501A. To the extent these licensors fail to meet their obligations under their license agreements, which we are not in control of, we may lose the benefits of our license agreements with these licensors. In the future, we may also enter into additional license agreements that are material to the development of our product candidates.

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

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

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

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

We are generally also subject to all of the same risks with respect to protection of intellectual property that we license, as we are for intellectual property that we own, which are described below. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize products could suffer.

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

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

We have an exclusive collaboration with Servier to develop and commercialize certain anti-CD19 allogeneic T cell product candidates, including ALLO-501A, and we hold the commercial rights to these product candidates in the United States. We also have an exclusive worldwide license from Cellectis to its TALEN gene-editing technology for the development of allogeneic T cell product candidates directed against 15 different cancer antigens. Our collaboration with Servier gives us access to TALEN gene-editing technology for all product candidates under the Servier Agreement. Certain intellectual property which is covered by these agreements may have been developed with funding from the U.S. government. If so, our rights in this intellectual property may be subject to certain research and other rights of the government.

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

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

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

The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. Even if the patents do successfully issue, third parties may challenge the patentability, validity, enforceability or scope thereof, for example through inter partes review (IPR) post-grant review or ex parte reexamination before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions, which may result in such patents being cancelled, narrowed, invalidated or held

unenforceable. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing their products to avoid being covered by our claims. If the breadth or strength of protection provided by the patents and patent applications we hold with respect to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our ability to commercialize, our product candidates. Further, if we encounter delays in our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced. United States patent applications containing or that at any time contained a claim not entitled to a priority date before March 16, 2013 are subject to the "first to file" system implemented by the America Invents Act (2011).

This first to file system will require us to be cognizant going forward of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we were the first to file any patent application related to our product candidates. Furthermore, for United States applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third-party or instituted by the USPTO, to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. For United States applications containing a claim not entitled to priority before March 16, 2013, there is a greater level of uncertainty in the patent law in view of the passage of the America Invents Act, which brought into effect significant changes to the United States patent laws, including new procedures for challenging patent applications and issued patents.

Confidentiality agreements with employees, Allogene Overland and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information.

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

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

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing our product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of infringement of the patent rights of others.

Third parties may assert that we infringe their patents or are otherwise employing their proprietary technology without authorization and may sue us. We are aware of several U.S. patents held by third parties relating to certain CAR compositions of matter and their methods of use. Generally, conducting clinical trials and other development activities in the United States is not considered an act of infringement. If and when any of our product candidates is approved by the FDA, third parties may then seek to enforce their patents by filing a patent infringement lawsuit against us. Patents issued in the United States by law enjoy a presumption of validity that can be rebutted only with evidence that is "clear and convincing," a heightened standard of proof. We may not be able to prove in litigation that any patent enforced against us is invalid.

Additionally, there may be third-party patents of which we are currently unaware with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may be alleged to infringe. In addition, third parties may obtain patents in

the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of our product candidates, constructs or molecules used in or formed during the manufacturing process, or any final product itself, the holders of any such patents may be able to block our ability to commercialize the product candidate unless we obtained a license under the applicable patents, or until such patents expire or they are finally determined to be held not infringed, unpatentable, invalid or unenforceable. Similarly, if any third-party patent were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy or patient selection methods, the holders of any such patent may be able to block our ability to develop and commercialize the product candidate unless we obtained a license or until such patent expires or is finally determined to be held not infringed, unpatentable, invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business.

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

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

Presently we have rights to the intellectual property, through licenses from third parties and under patent applications that we own or will own, that we believe will facilitate the development of our product candidates. Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights.

We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, which would harm our business. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In that event, we may be required to expend significant time and resources to develop or license replacement technology. We may need to cease use of the compositions or methods covered by such third-party intellectual property rights.

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

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

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

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

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

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

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

The lives of our patents may not be sufficient to effectively protect our products and business.

Patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after its first effective filing date. Although various extensions may be available, the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from biosimilar or generic medications. In addition, although upon issuance in the United States a patent's life can be increased based on certain delays caused by the USPTO, this increase can be reduced or eliminated based on certain delays caused by the patent applicant during patent prosecution. If we do not have sufficient patent life to protect our products, our business and results of operations will be adversely affected.

We or our licensors may be subject to claims challenging the inventorship of our patents and other intellectual property.

We or our licensors may in the future be subject to claims that former employees, collaborators, or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. For example, we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship. If we or our licensors fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we or our licensors are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

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

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate, as applicable, is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include IPR, ex parte re-examination and post grant review in the United States, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could

result in revocation or amendment to our patents in such a way that they no longer cover and protect our product candidates. The outcome following legal assertions of unpatentability, invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we, our patent counsel and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of unpatentability, invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection could have a material adverse impact on our business.

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

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. For example, in the 2013 case, *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.*, the U.S. Supreme Court held that certain claims to DNA molecules are not patentable. While we do not believe that any of the patents owned or licensed by us will be found invalid based on this decision, we cannot predict how future decisions by the courts, the U.S. Congress or the USPTO may impact the value of our patents.

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

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

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries where Allogene Overland may do business, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biopharmaceutical products, which could make it difficult for us or Allogene Overland to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

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

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

Risks Related to Ownership of Our Common Stock

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

The trading price of our common stock following our IPO in October 2018 has been and is likely to continue to be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, including limited trading volume. In addition to the factors discussed in this "Risk Factors" section, these factors include:

- the commencement, enrollment or results of our ongoing and planned clinical trials of our product candidates or any future clinical trials we or Servier may conduct, or changes in the development status of our product candidates;
- our or Servier's decision to initiate a clinical trial, not to initiate a clinical trial or to terminate an existing clinical trial;
- adverse results or delays in clinical trials;
- any delay in our regulatory filings for our product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including without limitation the FDA's issuance of a "refusal to file" letter or a request for additional information;
- our failure to commercialize our product candidates;
- adverse regulatory decisions, including failure to receive regulatory approval of our product candidates;
- changes in laws or regulations applicable to our products, including but not limited to clinical trial requirements for approvals;
- adverse developments concerning the manufacture or supply of our product candidates;
- our inability to obtain adequate product supply for any approved product or inability to do so at acceptable prices;
- our inability to establish collaborations if needed;
- additions or departures of key scientific or management personnel;
- unanticipated serious safety concerns related to immuno-oncology or related to the use of our product candidates or pre-conditioning regimen;
- introduction of new products or services offered by us or our competitors;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us or our competitors;
- our ability to effectively manage our growth;
- the size and growth of our initial cancer target markets;
- our ability to successfully treat additional types of cancers or at different stages;
- actual or anticipated variations in quarterly operating results;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;
- publication of research reports about us or our industry, or immunotherapy in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- changes in the market valuations of similar companies;
- overall performance of the equity markets;
- sales of our common stock by us or our stockholders in the future;
- trading volume of our common stock;
- changes in accounting practices;
- ineffectiveness of our disclosure controls or internal controls;
- disagreements with our auditor or termination of an auditor engagement;

- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- changes in the structure of healthcare payment systems;
- significant lawsuits, including patent or stockholder litigation;
- significant business disruptions caused by natural or man-made disasters, such as the COVID-19 pandemic;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

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

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

We currently anticipate that we will retain any future cash flow or earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders will therefore be limited to the appreciation of their stock.

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

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

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

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

General Risk Factors

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

The global credit and financial markets have experienced extreme volatility and disruptions in the past, most recently as a result of the COVID-19 pandemic. These disruptions can result in severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. Our portfolio of corporate and government bonds would also be adversely impacted. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our operations, growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive an economic downturn, which could directly affect our ability to attain our operating goals on schedule and on budget.

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

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

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

The trading market for our common stock could be influenced by the research and reports that industry or securities analysts publish about us or our business. If any of the analysts who cover us issue an adverse or misleading opinion regarding us, our business model, our intellectual property or our stock performance, or if the clinical trials and operating results fail to meet the expectations of analysts, our stock price would likely decline. If one or more analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters are located in South San Francisco, California, which consists of approximately 68,000 square feet for office and laboratory space. The lease for our headquarters commenced March 1, 2019 and has an initial 10-year term expiring on June 15, 2023. We entered into an additional lease in October 2018 for approximately 14,943 square feet of office and laboratory space in South San Francisco near our headquarters. This lease has an initial term of ten years and four months and commenced on November 1, 2018.

In February 2019, we entered into a lease for approximately 118,000 square feet to develop a state-of-the-art cell therapy manufacturing facility in Newark, California. The lease commenced in November 2020 and has an initial term of 15 years and eight months.

We believe that our existing facilities and other available properties will be sufficient for our needs for the foreseeable future.

Item 3. Legal Proceedings.

From time to time, we may become involved in litigation or other legal proceedings. We are not currently a party to any litigation or legal proceedings that, in the opinion of our management, are likely to have a material adverse effect on our

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

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Our common stock has been listed on The Nasdaq Global Select Market under the symbol "ALLO" since October 11, 2018. Prior to that date, there was no public trading market for our common stock.

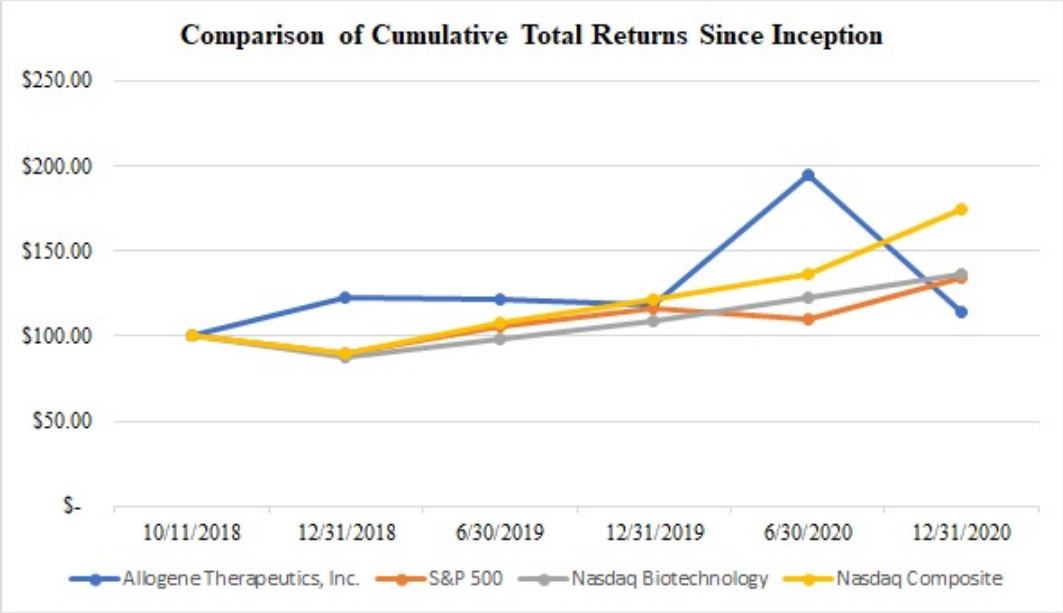
Holders of Common Stock

As of February 25, 2021, there were approximately 69 holders of record of our common stock.

Stock Performance Graph

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

The following graph shows the value of an investment of $100 from October 11, 2018 (the date our common stock commenced trading on The Nasdaq Global Select Market) through December 31, 2020, in our common stock, the Standard & Poor's 500 Index (S&P 500), the Nasdaq Biotechnology Index, and Nasdaq Composite Index. The historical stock price performance of our common stock shown in the performance graph is not necessarily indicative of future stock price performance.



	Cumulative Total Return date ended					
	10/11/2018	12/31/2018	6/30/2019	12/31/2019	6/30/2020	12/31/2020
Allogene Therapeutics, Inc.	$ 100.00	$ 122.41	$ 122.05	$ 118.09	$ 194.64	$ 114.73
S&P 500	$ 100.00	$ 90.28	$ 105.94	$ 116.35	$ 111.65	$ 135.26
Nasdaq Biotechnology	$ 100.00	$ 87.25	$ 98.26	$ 108.54	$ 123.19	$ 136.42
Nasdaq Composite	$ 100.00	$ 89.81	$ 108.37	$ 121.45	$ 136.15	$ 174.45

Dividend Policy

We have never declared or paid any cash dividends on our capital stock. We currently intend to retain all available funds and any future earnings to support our operations and finance the growth and development of our business. We do not intend to pay cash dividends on our common stock for the foreseeable future. Any future determination related to our dividend policy will be made at the discretion of our board of directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, contractual restrictions, business prospects and other factors our board of directors may deem relevant.

Use of Proceeds from Initial Public Offerings of Common Stock

In October 2018, we completed our initial public offering, and sold 18,000,000 shares of our common stock at a price of $18.00 per share pursuant to registration statements on Form S-1 (File Nos. 333-227333 and 333-227774) that were declared or became effective on October 10, 2018. Additionally, the underwriters exercised their option to purchase additional shares for an additional 2,700,000 shares at $18.00 per share. As a result of our IPO, we raised a total of approximately $343.3 million in net proceeds after deducting underwriting discounts and commissions of $26.1 million and offering expenses of $3.2 million. Upon completion of our IPO, (1) all outstanding shares of our Series A convertible preferred stock were converted into 61,655,922 shares of common stock and (2) we issued 7,856,176 shares of common stock upon the automatic conversion of the $120.2 million aggregate principal amount of convertible promissory notes sold in September 2018.

Upon receipt, the net proceeds from our IPO were held in cash, cash equivalents and investments. As of December 31, 2020, we have used $221.1 million of the net proceeds from our IPO. The net proceeds from our IPO are being used, together with our cash and cash equivalents, short-term and long-term investments, to fund continued advancement of our product pipeline, with the balance to be used to fund working capital and other general corporate purposes, which may include licensing, acquiring or investing in complementary businesses, technologies, products or assets.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

Item 6. Selected Consolidated Financial Data.

We have elected to comply with Item 301 of Regulation S-K, as amended February 10, 2021, and are omitting this disclosure in reliance thereon.

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

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

Overview

We are a clinical stage immuno-oncology company pioneering the development and commercialization of genetically engineered allogeneic T cell therapies for the treatment of cancer. We are developing a pipeline of off-the-shelf T cell product candidates that are designed to target and kill cancer cells. Our engineered T cells are allogeneic, meaning they are derived from healthy donors for intended use in any patient, rather than from an individual patient for that patient's use, as in the case of autologous T cells. We believe this key difference will enable us to deliver readily available treatments faster, more reliably, at greater scale, and to more patients.

We have a deep pipeline of allogeneic chimeric antigen receptor (CAR) T cell product candidates targeting multiple promising antigens in a host of hematological malignancies and solid tumors. Pursuant to the Exclusive Collaboration and License Agreement with Servier (Servier Agreement), we have exclusive rights to ALLO-501 and ALLO-501A, CAR T cell product candidates targeting CD19, in the United States, while Servier retains exclusive rights for these product candidates for all other countries. ALLO-501 and ALLO-501A use Cellectis S.A. (Cellectis) technologies under which Servier holds an exclusive worldwide license from Cellectis.

We are sponsoring a Phase 1 clinical trial (the ALPHA trial) of ALLO-501 in patients with R/R non-Hodgkin lymphoma (NHL). We are continuing the ALPHA trial to further explore and optimize the lymphodepletion regimen and treatment. We are also progressing the development of the second-generation version of ALLO-501, known as ALLO-501A. We have removed rituximab recognition domains in ALLO-501A, which we believe will potentially facilitate treatment of more patients, as rituximab is a typical part of a treatment regimen for a patient with NHL. We initiated a Phase 1/2 clinical trial for ALLO-501A (the ALPHA2 trial) in the second quarter of 2020 and, subject to data, we plan to progress to the Phase 2 portion of the trial in 2021.

We are also progressing three programs targeting B-cell maturation antigen (BCMA) for the treatment of multiple myeloma. We initiated a Phase 1 clinical trial (the UNIVERSAL trial) of ALLO-715, an allogeneic CAR T cell product candidate targeting BCMA, in adult patients with R/R multiple myeloma in the third quarter of 2019. In January 2020, we entered into a clinical trial collaboration agreement with SpringWorks Therapeutics, Inc. (SpringWorks) to evaluate ALLO-715 in combination with SpringWorks' investigational gamma secretase inhibitor, nirogacestat, in patients with R/R multiple myeloma. In December 2020, the FDA cleared our investigational new drug application (IND) and we recently initiated this combination trial as a cohort of the UNIVERSAL trial. Finally, we are advancing ALLO-605, an allogeneic CAR T cell product candidate targeting BCMA and our first product candidate to incorporate our TurboCAR technology. We expect to submit an IND in the first half of 2021 to initiate a Phase 1 clinical trial of ALLO-605.

We are continuing to enroll patients in the ALPHA trial, ALPHA2 trial and UNIVERSAL trial, however, enrollment of new patients in all three trials and the ability to conduct patient follow-up is being adversely impacted by the COVID-19 pandemic. We have also limited the number of staff working at our facilities. The exact timing of delays and overall impact of the COVID-19 pandemic to our business, preclinical studies and clinical trials is currently unknown, and we are monitoring the pandemic as it continues to rapidly evolve.

In December 2020, the FDA cleared our IND to initiate a Phase 1 clinical trial (the TRAVERSE trial) of ALLO-316, an allogeneic CAR T cell product candidate targeting CD70, in adult patients with advanced or metastatic clear cell renal cell carcinoma (ccRCC). The TRAVERSE trial is expected to initiate in the first quarter of 2021.

Since inception, we have had significant operating losses. Our net loss was $250.2 million for the year ended December 31, 2020. As of December 31, 2020, we had an accumulated deficit of $646.3 million. As of December 31, 2020, we had $1.0 billion in cash and cash equivalents and investments. We expect to continue to incur net losses for the foreseeable future, and we expect our research and development expenses and general and administrative expenses will continue to increase.

Our Research and Development and License Agreements

Asset Contribution Agreement with Pfizer

In April 2018, we entered into an Asset Contribution Agreement (Pfizer Agreement) with Pfizer pursuant to which we acquired certain assets and assumed certain liabilities from Pfizer, including agreements with Cellectis and Servier as described below, and other intellectual property for the development and administration of CAR T cells for the treatment of cancer. See Notes 6 and 7 to our consolidated financial statements included elsewhere in this report for further description of the Pfizer Agreement.

Research Collaboration and License Agreement with Cellectis

In June 2014, Pfizer entered into a Research Collaboration and License Agreement with Cellectis. In April 2018, Pfizer assigned the agreement to us pursuant to the Pfizer Agreement. In March 2019, we terminated the agreement with Cellectis and entered into a new license agreement with Cellectis. See Note 7 to our consolidated financial statements included elsewhere in this report for further descriptions of the prior agreement with Cellectis and the new license agreement with Cellectis.

Exclusive License and Collaboration Agreement with Servier

In October 2015, Pfizer entered into an Exclusive License and Collaboration Agreement (Servier Agreement) with Servier to develop, manufacture and commercialize certain allogeneic anti-CD19 CAR products, including UCART19, in the United States with the option to obtain the rights over certain additional allogeneic anti-CD19 CAR product candidates and for allogeneic CAR T cell product candidates directed against one additional target. In April 2018, Pfizer assigned the agreement to

us pursuant to the Pfizer Agreement. In October 2019, we agreed to waive our rights to the one additional target. See Note 7 to our consolidated financial statements included elsewhere in this report for further description of the Servier Agreement.

Collaboration and License Agreement with Notch

On November 1, 2019, we entered into a Collaboration and License Agreement (the Notch Agreement) with Notch Therapeutics Inc. (Notch), pursuant to which Notch granted us an exclusive, worldwide, royalty-bearing, sublicensable license under certain of Notch's intellectual property to develop, make, use, sell, import, and otherwise commercialize therapeutic gene-edited T cell and/or natural killer cell products from induced pluripotent stem cells directed at certain CAR targets for initial application in NHL, ALL and multiple myeloma. In addition, Notch has granted us an option to add certain specified targets to our exclusive license in exchange for an agreed upon per-target option fee.

The Notch Agreement includes a research collaboration to conduct research and pre-clinical development activities to generate engineered cells directed to our exclusive targets, which will be conducted in accordance with an agreed research plan and budget under the oversight of a joint development committee. See Note 7 to our consolidated financial statements included elsewhere in this report for further description of the Notch Agreement.

In connection with the execution of the Notch Agreement, we made an upfront payment to Notch of $10.0 million. In addition, we made a $5.0 million investment in Notch's series seed convertible preferred stock. In February 2021, we made a further investment as part of a Series A preferred stock financing of Notch of approximately $15.9 million. Immediately following this investment, we had a 17% ownership interest in Notch's capital stock on a fully diluted basis.

Strategic Alliance with The University of Texas MD Anderson Cancer Center

On October 6, 2020, we entered into a strategic five-year collaboration agreement with The University of Texas MD Anderson Cancer Center (MD Anderson) for the preclinical and clinical investigation of allogeneic CAR T cell product candidates. See Note 7 to our consolidated financial statements included elsewhere in this report for further description of the agreement with MD Anderson.

License Agreement with Allogene Overland Biopharm (CY) Limited

On December 14, 2020, we entered into a License Agreement with Allogene Overland Biopharm (CY) Limited (Allogene Overland), a joint venture established by us and Overland Pharmaceuticals (CY) Inc. (Overland), pursuant to a Share Purchase Agreement, dated December 14, 2020, for the purpose of developing, manufacturing and commercializing certain allogeneic CAR T cell therapies for patients in greater China, Taiwan, South Korea and Singapore (the JV Territory).

Pursuant to the Share Purchase Agreement, we acquired Seed Preferred Shares in Allogene Overland representing 49% of Allogene Overland's outstanding stock as partial consideration for the License Agreement, and Overland acquired Seed Preferred Shares representing 51% of Allogene Overland's outstanding stock for $117.0 million in upfront and certain quarterly cash payments, to support operations of Allogene Overland. As of December 31, 2020, Allogene and Overland are the sole equity holders in Allogene Overland. The Company received $40 million from Allogene Overland as partial consideration for the License Agreement .

Pursuant to the License Agreement, we granted Allogene Overland an exclusive license to develop, manufacture and commercialize certain allogeneic CAR T cell candidates directed at four targets, BCMA, CD70, FLT3, and DLL3, in the JV Territory. As consideration, we would also be entitled to additional regulatory milestone payments of up to $40.0 million and, subject to certain conditions, tiered low-to-mid single-digit sales royalties.

Promises that we concluded were distinct performance obligations in the License Agreement included: (1) the license of intellectual property and delivery of know-how, (2) the manufacturing license, related know-how and support, (3) if and when available know-how developed in future periods, and (4) participation in the joint steering committee.

In order to determine the transaction price, we evaluated all the payments to be received during the duration of the contract. Fixed consideration exists in the form of the upfront payment. Regulatory milestones and royalties were considered variable consideration. We constrain the estimated variable consideration when we assess it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. Milestone fees were constrained and not included in the transaction price due to the uncertainties of research and development. We re-evaluate the transaction price, including the estimated variable consideration included in the transaction price and all constrained amounts, in each reporting

period and as uncertain events are resolved or other changes in circumstances occur. The shares of Series Seed Preferred Stock were accounted for as part of our joint venture and equity method accounting upon formation of the joint venture, and as such, were excluded from the transaction price. We determined that the initial transaction price consists of the upfront payment of $40.0 million. The allocation of the transaction price is performed based on standalone selling prices, which are based on estimated amounts that we would charge for a performance obligation if it were sold separately. The transaction price allocated to the license of intellectual property and delivery of know-how will be recognized upon grant of license and delivery of know-how. The transaction price allocated to (i) the manufacturing license, related know-how and support services, (ii) if and when available know-how developed in future periods, and (iii) participation in the joint steering committee, will be recognized over time as the services are delivered. Funds received in advance are recorded as deferred revenue and will be recognized as the performance obligations are satisfied. We expect a substantial portion of the upfront payment of $40 million will be recognized during the quarter ending on March 31, 2021. See Note 7 to our consolidated financial statements included elsewhere in this report for further description of the License Agreement and Share Purchase Agreement with Allogene Overland.

Transition Services Agreement

In connection with the closing of the Pfizer Agreement, we entered into a Transition Services Agreement (TSA) with Pfizer in April 2018, pursuant to which we obtained from Pfizer certain (i) research and development services, including services relating to testing, studies, and clinical trials, project management services, laboratory equipment and operations services, animal care services, data storage services and regulatory strategy services, and (ii) general and administrative services, including business technology services, compliance services, finance/accounting services, and procurement, manufacturing and supply chain services, with respect to the assets that we purchased from Pfizer. Under the TSA, Pfizer also provided us with certain facilities and facility management services. The services were provided by certain employees of Pfizer as independent contractors of Allogene. We believe that it was helpful for Pfizer to provide such services to us under the TSA to help facilitate the efficient operation of our business after the asset purchase. Pfizer began providing the services in May 2018 and the TSA was terminated in September 2019.

Components of Results of Operations

Operating Expenses

Research and Development

To date, our research and development expenses have related primarily to discovery efforts, preclinical and clinical development, and manufacturing of our product candidates. Research and development expenses for the year ended December 31, 2020 included costs associated with our clinical and preclinical stage pipeline candidates and research into newer technologies. The most significant research and development expenses for the year relate to costs incurred for the development of our most advanced product candidates and include:

- expenses incurred under agreements with our collaboration partners and third-party contract organizations, investigative clinical trial sites that conduct research and development activities on our behalf, and consultants;
- costs related to the production of clinical materials, including fees paid for raw materials and to contract manufacturers;
- laboratory and vendor expenses related to the execution of preclinical and clinical trials;
- employee-related expenses, which include salaries, benefits and stock-based compensation;
- facilities and other expenses, which include expenses for rent and maintenance of facilities, depreciation and amortization expense and other supplies; and
- other significant research and development costs, which include overhead costs.

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

We are required to reimburse Servier for 60% of the costs associated with the prior development of UCART19, including for the CALM and PALL clinical trials of UCART19. We accrue for costs incurred by monitoring the status of

clinical trials and the invoices received from Servier. We adjust our accrual as actual costs become known. Servier is required to reimburse us for 40% of the costs associated with the development of ALLO-501 and ALLO-501A. Collaboration expenses and cost reimbursement are recorded on a net basis as a research and development expense in our consolidated statements of operations and comprehensive loss.

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect our research and development expenses to increase in the future as our clinical programs progress and as we seek to initiate clinical trials of additional product candidates. The cost of advancing our manufacturing process as well as the cost of manufacturing product candidates for clinical trials are included in our research and development expense. We also expect to incur increased research and development expenses as we selectively identify and develop additional product candidates. However, it is difficult to determine with certainty the duration and completion costs of our current or future preclinical programs and clinical trials of our product candidates.

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

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

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

Because our product candidates are still in clinical and preclinical development and the outcome of these efforts is uncertain, we cannot estimate the actual amounts necessary to successfully complete the development and commercialization of product candidates or whether, or when, we may achieve profitability.

General and Administrative

General and administrative expenses consist primarily of salaries and other staff-related costs, including stock-based compensation for options and restricted stock units granted. General and administrative expenses also include stock-based compensation expense related to the modification of shares of common stock issued to our founders to include vesting conditions. Other significant costs include costs relating to facilities and overhead costs, legal fees relating to corporate and patent matters, insurance, investor relations costs, fees for accounting and consulting services, information technology, and other general and administrative costs. General and administrative costs are expensed as incurred, and we accrue for services provided by third parties related to the above expenses by monitoring the status of services provided and receiving estimates from our service providers, and adjusting our accruals as actual costs become known.

We expect our general and administrative expenses to increase over the next several years to support our continued research and development activities, manufacturing activities, potential commercialization of our product candidates and the increased costs of operating as a public company, including additional compliance-related expenses as a result of no longer being an emerging growth company. These increases are anticipated to include increased costs related to the hiring of additional

personnel, developing infrastructure, fees to outside consultants, lawyers and accountants, and increased costs associated with being a public company such as expenses related to services associated with maintaining compliance with Nasdaq listing rules and SEC requirements, insurance and investor relations costs.

Other (Expense) Income, Net:

Change in Fair Value of 2018 Notes

In September 2018, we sold and issued an aggregate of $120.2 million in convertible promissory notes (2018 Notes) and received net cash proceeds of $116.8 million. We elected on issuance to account for the 2018 Notes at fair value until their settlement. In the year ended December 31, 2018, the change in fair value of the 2018 Notes was recognized through the statement of operations. The 2018 Notes settled on the closing of our IPO in October 2018.

Interest Expense

Interest expense consists of debt issuance costs we incurred to issue the 2018 Notes. The debt issuance costs were expensed on issuance because we elected to record the 2018 Notes at fair value.

Interest and Other Income, Net

Interest and other income, net consists of interest earned on our cash, cash equivalents and investments and gains and losses recognized during the period.

Other Expense

Other expense consists of non-operating expenses, including our share of equity investments' net losses for the period.

Results of Operations

Comparison of the Years Ended December 31, 2020, 2019 and 2018

The following sets forth our results of operations for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31,			Change	
	2020	2019	2018	2020 vs 2019	2019 vs 2018
Operating expenses:					
Research and development	192,987	144,535	151,860	48,452	(7,325)
General and administrative	65,256	57,473	40,982	7,783	16,491
Total operating expenses	258,243	202,008	192,842	56,235	9,166
Loss from operations	(258,243)	(202,008)	(192,842)	(56,235)	(9,166)
Other (expense) income, net:					
Change in fair value of convertible note payable	—	—	(21,211)	—	21,211
Interest expense	—	—	(3,358)	—	3,358
Interest and other income, net	9,164	17,351	5,789	(8,187)	11,562
Other expense	(1,142)	(268)	—	(874)	(268)
Total other income (expense), net	8,022	17,083	(18,780)	(9,061)	35,863
Loss before income taxes	(250,221)	(184,925)	(211,622)	(65,296)	26,697
Benefit from income taxes	—	331	117	(331)	214
Net loss	(250,221)	(184,594)	(211,505)	(65,627)	26,911

Research and Development Expenses

Research and development expenses were $193.0 million and $144.5 million for the years ended December 31, 2020 and 2019, respectively. The net increase of $48.5 million was primarily due to an increase in personnel related costs of $28.9

million, of which $11.9 million was increased stock-based compensation expense, an increase in external costs relating to the advancement of our product candidates of $16.1 million, and an increase in allocated building rent and facilities costs of $5.3 million, offset by a decrease in TSA expenses of $1.2 million and a decrease in travel related costs of $1.0 million due to the impact of the COVID-19 pandemic.

Research and development expenses were $144.5 million and $151.9 million for the years ended December 31, 2019 and 2018, respectively. The net decrease of $7.3 million was primarily due to $109.4 million in expenses related to the acquired in-process research and development assets with no alternative future use, acquired from Pfizer in April 2018. This was offset by a $102.1 million increase, driven primarily by increased external costs related to the advancement of our pipeline candidates of $44.6 million, increased personnel related costs of $40.8 million, including an increase of $18.0 million in stock-based compensation expense, and increased allocated building rent and facilities costs of $19.2 million, offset by a decrease of $4.0 million in Pfizer TSA costs.

General and Administrative Expenses

General and administrative expenses were $65.3 million and $57.5 million for the years ended December 31, 2020 and 2019, respectively. The net increase of $7.8 million was primarily due to an increase in personnel related costs of $8.4 million, of which $7.3 million was increased stock-based compensation expense, an increase in building rent and facilities costs of $2.4 million, an increase in legal and professional services of $1.2 million, offset by a decrease in TSA expenses of $3.5 million and a decrease in travel related costs of $0.8 million due to the impact of the COVID-19 pandemic.

General and administrative expenses were $57.5 million and $41.0 million for the years ended December 31, 2019 and 2018, respectively. The net increase of $16.5 million was primarily due to a $18.6 million increase in personnel related costs, including an increase of $9.7 million in stock-based compensation expense, and increased legal and professional services of $2.7 million. This was offset by a $5.1 million decrease due to a greater proportion of facilities costs being allocated to research and development expenses and a $1.5 million decrease in expenses incurred under the Pfizer TSA.

Change in Fair Value of 2018 Notes

The change in fair value of convertible notes of $21.2 million for the year ended December 31, 2018 was due to the accretion of the 2018 Notes to their fair value from the date of issuance at $120.2 million to the fair value upon settlement of $141.4 million which occurred in 2018. There were no similar transactions in the years ended December 31, 2020 and 2019.

Interest Expense

Interest expense of $3.4 million for the year ended December 31, 2018 consists of debt issuance costs that were expensed on issuance of the 2018 Notes. There were no similar transactions in the years ended December 31, 2020 and 2019.

Interest and Other Income, Net

Interest and other income, net was $9.2 million and $17.4 million for the years ended December 31, 2020 and 2019, respectively. The $8.2 million decrease was due to lower yields and a corresponding reduction in the interest earned on our cash, cash equivalents and investments.

Interest and other income, net was $17.4 million and $5.8 million for the years ended December 31, 2019 and 2018, respectively. The $11.6 million increase was due to interest earned on our cash equivalents and investments as our combined cash, cash equivalents and investments interest earning balance was higher on average during the 12 months ended December 31, 2019 compared to the 12 months ended December 31, 2018.

Liquidity, Capital Resources and Plan of Operations

To date, we have incurred significant net losses and negative cash flows from operations. As of December 31, 2020, we had $1.0 billion in cash, cash equivalents and investments. We believe that the aggregate of our current cash and cash equivalents and investments available for operations will be sufficient to fund our operations for at least the next 12 months from the date this Annual Report on Form 10-K is filed with the SEC.

Our operations have been financed primarily by net proceeds from the sale and issuance of our convertible preferred stock, the issuance of the 2018 Notes, net proceeds from our IPO, our at-the-market (ATM) offerings, and our June 2020 underwritten public offering. In connection with our IPO in 2018, we sold an aggregate of 20,700,000 shares of our common

stock (inclusive of 2,700,000 shares of common stock pursuant to the over-allotment option granted to the underwriters) at a price of $18.00 per share and received approximately $343.3 million in net proceeds. In November 2019, we entered into a sales agreement with Cowen and Company, LLC (Cowen) under which we may from time to time issue and sell shares of our common stock through Cowen in ATM offerings for an aggregate offering price of up to $250.0 million. During the year ended December 31, 2020, we sold an aggregate of 848,663 shares of common stock in ATM offerings resulting in net proceeds of $26.2 million. As of December 31, 2020, $167.3 million remains available for sale under the sales agreement with Cowen.

In June 2020, we sold 13,457,447 shares of our common stock, which included 1,755,319 shares sold pursuant to the full exercise of the underwriters' option to purchase additional shares, in an underwritten public offering at a price of $47.00 per share, which resulted in net proceeds of approximately $595.7 million after deducting the underwriting discounts and commissions and other expenses.

Capital Resources

Our primary use of cash is to fund construction projects for our manufacturing facility and operating expenses, which consist primarily of clinical manufacturing and research and development expenditures related to our lead product candidates, other research efforts, and to a lesser extent, general and administrative expenditures. Cash used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the change in our outstanding accounts payable and accrued expenses and other current liabilities.

Our product candidates are still in the early stages of clinical and preclinical development and the outcome of these efforts is uncertain. Accordingly, we cannot estimate the actual amounts necessary to successfully complete the development and commercialization of our product candidates or whether, or when, we may achieve profitability. Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity or debt financings and collaboration and license arrangements. If, and when, we do raise additional capital through public or private equity offerings, the ownership interest of our existing stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. If we are unable to raise capital when needed, we will need to delay, reduce or terminate planned activities to reduce costs. Doing so will likely harm our ability to execute our business plans.

Cash Flows

The following table summarizes our cash flows for the periods indicated:

	Year Ended December 31,		
	2020	**2019**	**2018**
	(in thousands)		
Net cash (used in) provided by:			
Operating activities	$ (115,093)	$ (137,350)	$ (44,653)
Investing activities	(505,123)	164,084	(632,798)
Financing activities	633,591	58,960	771,182
Net increase in cash, cash equivalents and restricted cash	$ 13,375	$ 85,694	$ 93,731

Operating Activities

During the year ended December 31, 2020, cash used in operating activities of $115.1 million was attributable to a net loss of $250.2 million, substantially offset by non-cash charges of $81.2 million and a net change of $53.9 million in our net operating assets and liabilities. The non-cash charges consisted primarily of stock-based compensation of $65.3 million, depreciation and amortization of $7.4 million, non-cash rent expense of $4.0 million and net amortization and accretion on investment securities of $3.3 million. The net change in operating assets and liabilities was primarily due to a $39.0 million increase in deferred revenue within current liabilities, a $18.7 million increase in accrued and other current liabilities and $0.6 million increase in accounts payable, offset by an increase in prepaid expenses and other current assets of $3.2 million and a decrease in other-long term liabilities of $1.3 million.

During the year ended December 31, 2019, cash used in operating activities of $137.4 million was attributable to a net loss of $184.6 million, substantially offset by non-cash charges of $54.1 million and a net change of $6.9 million in our net operating assets and liabilities. The non-cash charges consisted primarily of stock-based compensation of $46.1 million, non-

cash rent expense of $6.8 million and depreciation and amortization of $4.4 million, offset by net amortization and accretion on investment securities of $3.6 million. The net change in operating assets and liabilities was primarily due to a $6.4 million increase in accrued and other current liabilities, offset by an increase in prepaid expenses and other current assets of $5.4 million, an increase in other long-term assets of $4.4 million and a decrease in other-long term liabilities of $2.4 million.

During the year ended December 31, 2018, cash used in operating activities of $44.7 million was attributable to a net loss of $211.5 million, substantially offset by non-cash charges of $154.8 million and a net change of $12.1 million in our net operating assets and liabilities. The non-cash charges consisted primarily of acquired in-process research and development expense resulting from the asset acquisition from Pfizer of $109.4 million, change in fair value of convertible notes payable of $21.2 million and $18.6 million of stock-based compensation. The net change in operating assets and liabilities was primarily due to a $12.1 million increase in accruals and other liabilities driven by increased professional fees and an $8.8 million increase in accounts payable resulting from the timing of payments made to our collaboration partners and Pfizer accrued services. This was partially offset by a $8.6 million increase in prepaid expenses and other current assets and a $0.2 million increase in other long-term assets.

Investing Activities

During the year ended December 31, 2020, net cash used by investing activities of $505.1 million was related to the purchase of investments of $1.0 billion and purchases of property and equipment of $66.0 million, offset by cash inflows from maturities of investments of $593.6 million and cash inflows from sales of investments of $4.8 million.

During the year ended December 31, 2019, net cash provided by investing activities of $164.1 million was related to proceeds from investment maturities of $472.6 million, offset by cash used for investment purchases of $252.6 million, cash used in purchases of property and equipment of $50.8 million and cash used in connection with our investment in Notch's series seed convertible preferred stock of $5.1 million, inclusive of transaction costs.

During the year ended December 31, 2018, cash used by investing activities of $632.8 million was related to the purchase of investments of $649.3 million, cash transaction costs of $2.1 million incurred in the asset acquisition from Pfizer and the purchase of property and equipment of $3.2 million. This was offset by cash inflows from maturities of investments of $19.2 million and cash inflows from sales of investments of $2.6 million.

Financing Activities

During the year ended December 31, 2020, net cash provided by financing activities of $633.6 million was related to net proceeds from the issuance of common stock in ATM offerings and an underwritten public offering of $621.9 million, proceeds from the issuance of common stock upon the exercise of stock options of $8.8 million and proceeds from the employee stock purchase plan of $2.8 million.

During the year ended December 31, 2019, net cash provided by financing activities of $59.0 million was related to net proceeds from the issuance of common stock in ATM offerings of $54.2 million, proceeds from the issuance of common stock upon the exercise of stock options of $3.0 million and proceeds from the employee stock purchase plan of $1.8 million.

During the year ended December 31, 2018, cash provided by financing activities of $771.2 million was related to net proceeds of $299.3 million from the issuance of our Series A and A-1 convertible preferred stock, $116.8 million from the issuance of the 2018 Notes, $343.7 million in net proceeds from our IPO and $11.4 million from the issuance of common stock in connection with stock option exercises.

Contractual Obligations and Commitments

The following table summarizes our commitments and contractual obligations as of December 31, 2020

	Payments Due by Period				
	Total	2021	2022-2024	2025-2027	2028 and After
	(in thousands)				
Contractual Obligations:					
Operating lease obligations [1]	$ 87,653	$ 6,485	$ 24,514	$ 25,995	$ 30,659
Total	$ 87,653	$ 6,485	$ 24,514	$ 25,995	$ 30,659

[1] In August 2018, we entered into an operating lease agreement for our headquarters in South San Francisco. The lease term is 127 months beginning August 2018 through February 2029. In October 2018, we entered into an operating lease agreement for additional office and laboratory space in South San Francisco near our headquarters. The lease has a term of ten years and four months commencing on November 1, 2018. In December 2018, we entered into an operating lease agreement for office space in New York, and another operating lease agreement for office space in Los Angeles. The lease terms are 79 months and 36 months, respectively, with the leases commencing on December 1, 2018 and December 19, 2018, respectively. In February 2019, we entered into a lease agreement for manufacturing space in Newark, California. The lease term is for 188 months beginning November 2020.

Commitments

Our commitments primarily consist of obligations under our agreements with Pfizer, Cellectis, Servier and Notch. Under these agreements we are required to make milestone payments upon successful completion of certain regulatory and sales milestones on a target-by-target and country-by-country basis. The payment obligations under the license agreements are contingent upon future events such as our achievement of specified development, regulatory and commercial milestones and we will be required to make development milestone payments and royalty payments in connection with the sale of products developed under these agreements. As of December 31, 2020, we were unable to estimate the timing or likelihood of achieving the milestones or making future product sales.

Additionally, we have entered into agreements with third-party contract manufacturers for the manufacture and processing of certain of our product candidates for clinical testing purposes, and we have entered and will enter into other contracts in the normal course of business with contract research organizations for clinical trials and other vendors for other services and products for operating purposes. These agreements generally provide for termination or cancellation, other than for costs already incurred. As of December 31, 2020, the Company had non-cancellable purchase commitments of $5.4 million.

On October 6, 2020, we announced we entered into a strategic five-year collaboration agreement with MD Anderson for the preclinical and clinical investigation of allogeneic CAR T cell product candidates. We and MD Anderson are collaborating on the design and conduct of preclinical and clinical studies with oversight from a joint steering committee. Under the terms of the agreement, we have committed up to $15.0 million of funding for the duration of the agreement. Payment of this funding is contingent on mutual agreement to study orders in order for any study to be included under the alliance. We made an upfront payment of $3.0 million to MD Anderson in the year ended December 31, 2020. We are obligated to make further payments to MD Anderson each year upon the anniversary of the agreement effective date through the duration of the agreement term. The agreement may be terminated by either party for material breach by the other party. Individual studies may be terminated for, among other things, material breach, health and safety concerns or where the institutional review board, the review board at the clinical site with oversight of the clinical study, requests termination of any study. Where any legal or regulatory authorization is finally withdrawn or terminated, the relevant study will also terminate automatically.

In July 2020, we entered into a Solar Power Purchase and Energy Services Agreement for the installation and operation of a solar photovoltaic generating system and battery energy storage system at our manufacturing facility in Newark, California. The agreement has a term of 20 years and is expected to commence in the first half of 2021. We are obligated to pay for electricity generated from the system at an agreed rate for the duration of the agreement term. Termination of the agreement by us will result in a termination payment due of approximately $4.3 million. In connection with the agreement, we maintain a letter of credit for the benefit of the service provider in the amount of $4.3 million which is disclosed as restricted cash in the consolidated balance sheet as of December 31, 2020.

We also have a Change in Control and Severance Plan that require the funding of specific payments, if certain events occur, such as a change of control and the termination of employment without cause.

Off-Balance Sheet Arrangements

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

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with United States generally accepted accounting principles. 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 expenses incurred during the reporting periods. Our estimates are based on our 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. Actual results may differ from these estimates under different assumptions or conditions.

We believe that the assumptions and estimates associated with accrued research and development expenditures, revenue recognition, research and development expenses, stock-based compensation and leases have the most significant impact on our consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

Accrued Research and Development Costs

We accrue liabilities for estimated costs of research and development activities conducted by our collaboration partners and third-party service providers, which include the conduct of preclinical and clinical studies, and contract manufacturing activities. We recorded the estimated costs of research and development activities based upon the estimated amount of services provided but not yet invoiced, and includes these costs in the accrued and other current liabilities on the consolidated balance sheets and within research and development expense on the consolidated statements of operations and comprehensive loss.

We accrue for these costs based on factors such as estimates of the work completed and budget provided and in accordance with agreements established with our collaboration partners and third-party service providers. We make significant judgments and estimates in determining the accrued liabilities balance in each reporting period. As actual costs become known, we adjust its accrued liabilities. We have not experienced any material differences between accrued costs and actual costs incurred since our inception.

Revenue Recognition

In the near future, our revenue is anticipated to be generated through collaboration research and license agreements. The terms of these agreements are expected to contain multiple deliverables which may include (i) grant of licenses, (ii) transfer of know-how, (iii) research and development activities, (iii) clinical manufacturing and, (iv) product supply. The payment terms of these agreements may include nonrefundable upfront fees, payments for research and development activities, payments based upon the achievement of certain milestones, royalty payments based on product sales derived from the collaboration, and payments for supplying product.

We will analyze our collaboration arrangements to assess whether they are within the scope of ASC 808, Collaborative Arrangements (ASC 808) to determine whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities. This assessment is performed throughout the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For collaboration arrangements within the scope of ASC 808 that contain multiple elements, we first determine which elements of the collaboration are deemed to be within the scope of ASC 808 and those that are more reflective of a vendor-customer relationship and, therefore, within the scope of Topic 606, Revenue from Contracts with Customers (ASC 606). For elements of collaboration arrangements that are accounted for pursuant to ASC 808, an appropriate recognition method is determined and applied consistently, generally by analogy to Topic 606.

For elements of those arrangements that we determine should be accounted for under ASC 606, we assess which activities in our collaboration agreements are performance obligations that should be accounted for separately and determine the transaction price of the arrangement, which includes the assessment of the probability of achievement of future milestones and other potential consideration. A performance obligation represents a promise in a contract to transfer a distinct good or service to a customer, which represents a unit of accounting in accordance with ASC 606. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. We consider a performance obligation satisfied once we have transferred control of a good or service to the customer, meaning the customer has the ability to use and obtain the benefit of the good or service. A portion of the consideration should be allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The total consideration which we expect to collect in exchange for our products is an estimate and may be fixed or variable. We constrain the estimated variable consideration when we assess it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. The transaction price is re-evaluated, including the estimated variable consideration included in the transaction price and all constrained amounts, in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The allocation of the transaction price is performed based on standalone selling prices, which are based

on estimated amounts that we would charge for a performance obligation if it were sold separately. Revenue is recognized when, or as, performance obligations in the contracts are satisfied, in the amount reflecting the expected consideration to be received from the goods or services transferred to the customers. Funds received in advance are recorded as deferred revenue and are recognized as the related performance obligation is satisfied.

Research and Development Expenses

We expense research and development costs as incurred. Acquired intangible assets are expensed as research and development costs if, at the time of payment, the technology is under development; is not approved by the FDA or other regulatory agencies for marketing; has not reached technical feasibility; or otherwise has no foreseeable alternative future use.

Research and development expenses also include costs incurred for internal and sponsored and collaborative research and development activities. Research and development costs consist of salaries and benefits, including associated stock-based compensation, and laboratory supplies and facility costs, as well as fees paid to other entities that conduct certain research and development activities on our behalf. Costs associated with co-development activities performed under the various license and collaboration agreements, including milestones achieved, are included in research and development expenses.

Stock-Based Compensation

We recognize compensation costs related to stock-based awards granted to employees and directors, including stock options, based on the estimated fair value of the awards on the date of grant. We estimate the grant date fair value, and the resulting stock-based compensation, using the Black-Scholes option-pricing model. The grant date fair value of the stock-based awards is generally recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective awards.

The Black-Scholes option-pricing model requires the use of subjective assumptions to determine the fair value of stock-based awards. These assumptions include:

- *Fair value of common stock*—For grants before October 2018 when we were private and there was no public market for our common stock, the fair value of our common stock underlying share-based awards was estimated on each grant date by our board of directors. In order to determine the fair value of our common stock underlying option grants, our board of directors considered, among other things, valuations of our common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provided by the American Institute of Certified Public Accountants Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. For all grants subsequent to our IPO in October 2018, the fair value of common stock was determined by taking the closing price per share of common stock per Nasdaq.
- *Expected term*— The expected term represents the period that stock-based awards are expected to be outstanding. The expected term for option grants is determined using the simplified method. The simplified method deems the term to be the average of the time-to-vesting and the contractual life of the stock-based awards.
- *Expected volatility*— We use an average historical stock price volatility of comparable public companies within the biotechnology and pharmaceutical industry that were deemed to be representative of future stock price trends, in addition to some consideration to our own stock price volatility. We continue to utilize comparable public companies as part of this process as we do not have sufficient trading history for our common stock. We will continue to apply this process until a sufficient amount of historical information regarding the volatility of our own stock price becomes available.
- *Risk-free interest rate*—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.
- *Expected dividend*—We have never paid dividends on its common stock and have no plans to pay dividends on our common stock. Therefore, we used an expected dividend yield of zero.

For the years ended December 31, 2020, 2019 and 2018, stock-based compensation was $65.3 million, $46.1 million and $18.6 million, respectively. As of December 31, 2020 and 2019, we had $149.4 million and $148.6 million, respectively, of total unrecognized stock-based compensation relating to options, restricted stock units and founders stock.

Leases

We early adopted Accounting Standards Update (ASU) No. 2016-02, Leases as of January 1, 2018. For our long-term operating leases, we recognized right-of-use assets and lease liabilities on our consolidated balance sheet. The lease liabilities are determined as the present value of future lease payments using an estimated rate of interest that we would have to pay to borrow equivalent funds on a collateralized basis at the lease commencement date. The right-of-use assets are based on the liability adjusted for any prepaid or deferred rent. For each lease, the lease term at the commencement date is determined by considering whether renewal options and termination options are reasonably assured of exercise.

Rent expense for the operating lease is recognized on a straight-line basis over the lease term and is included in operating expenses on the consolidated statements of operations and comprehensive loss. Variable lease payments include lease operating expenses.

We elected to exclude from our consolidated balance sheets recognition of leases having a term of 12 months or less (short-term leases) and elected to not separate lease components and non-lease components for our long-term real estate leases.

Recent Accounting Pronouncements

Please refer to Note 2 to our consolidated financial statements for a discussion of new accounting standards and updates that may impact us.

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

Interest Rate Risk

Our cash, cash equivalents and investments of $1.0 billion as of December 31, 2020, consist of bank deposits, money market funds and available-for-sale securities. Such interest-earning instruments carry a degree of interest rate risk; however, historical fluctuations in interest income have not been significant for us. A 10% change in the interest rates in effect on December 31, 2020 would not have had a material effect on the fair market value of our cash equivalents and available-for-sale securities.

Foreign Currency Exchange Rate Risk

Our collaboration agreement with Servier requires collaboration payments for shared clinical development costs to be paid in euros, and thus we face foreign exchange risk as a result of entering into transactions denominated in currencies other than U.S. dollars. Due to the uncertain timing of expected payments in foreign currencies, we do not utilize any forward exchange contracts. All foreign transactions settle on the applicable spot exchange basis at the time such payments are made. An adverse movement in foreign exchange rates could have an effect on payments due and made to our collaboration partner as well as other foreign suppliers and for license agreements. A 10% change in the applicable foreign exchange rates during the periods presented would not have had a material effect on our consolidated financial statements. As of December 31, 2020, we had $2.5 million of other receivables and $0.2 million of current liabilities denominated in foreign currency.

Item 8. Financial Statements and Supplementary Data.

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For the years ended December 31, 2020 and 2019

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Allogene Therapeutics, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Allogene Therapeutics, Inc. (the Company) as of December 31, 2020 and 2019, the related consolidated statements of operations and comprehensive loss, statements of convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the three years in the period ended December 31, 2020 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, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 25, 2021 expressed an unqualified opinion thereon.

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 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. 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.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

	Accrued Research and Development Costs
Description of the Matter	As discussed in Note 1 liabilities are recorded for estimated unpaid costs of research and development activities conducted by the Company and its collaboration partners and third-party service providers, which include the conduct of preclinical and clinical studies, and contract manufacturing activities. Total research and development expenses were $193 million during the year ended December 31, 2020 and include the estimated costs of accrued research and development activities for services provided but not yet invoiced. The accrual for these costs is determined after consideration of several factors, including budgets and estimates of the work completed in accordance with agreements established with the Company's collaboration partners and third-party service providers. Auditing accrued research and development costs was complex due to significant judgments and estimates made by management in determining the required accruals.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design, and tested the operating effectiveness of relevant controls over the Company's determination of accrued research and development costs, including controls over the determination of significant assumptions and the completeness and accuracy of the data used in determining accrued costs. Our audit procedures included, among others, examining, on a test basis, evidence regarding the estimated accrued amounts through comparison of expenses incurred to budgeted amounts and to expenses incurred in prior periods and obtaining an understanding of the reasons for changes. We verified that accrued amounts were in accordance with key terms and conditions through review of the underlying agreements with the Company's collaboration partners and third-party service providers. We verified expenses incurred by obtaining confirmation from the Company's collaboration partners and further validated accrued amounts based on information provided by third-party service providers.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2018.
San Jose, California
February 25, 2021

ALLOGENE THERAPEUTICS, INC.
Consolidated Balance Sheets
(In thousands, except share and per share amounts)

	December 31, 2020	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 183,351	$ 175,126
Short-term investments	644,559	355,407
Prepaid expenses and other current assets	17,220	14,043
Total current assets	845,130	544,576
Long-term investments	204,208	58,322
Operating lease right-of-use asset	41,295	44,495
Property and equipment, net	118,840	56,449
Intangible assets, net	—	151
Restricted cash	9,449	4,299
Other long-term assets	5,169	4,618
Equity method investment	3,738	4,892
Total assets	$ 1,227,829	$ 717,802
Liabilities, convertible preferred stock and stockholders' equity		
Current liabilities:		
Accounts payable	$ 10,390	$ 9,250
Accrued and other current liabilities	44,938	23,829
Deferred revenue	38,992	—
Total current liabilities	94,320	33,079
Lease liability, noncurrent	50,809	51,349
Other long-term liabilities	3,083	4,351
Total liabilities	148,212	88,779
Commitments and Contingencies (Notes 6, 7 and 8)		
Stockholders' equity:		
Preferred stock, $0.001 par value: 10,000,000 authorized as of December 31, 2020 and December 31, 2019; no shares were issued and outstanding as of December 31, 2020 and December 31, 2019	—	—
Common stock, $0.001 par value: 200,000,000 authorized as of December 31, 2020 and December 31, 2019; 140,474,305 and 124,267,358 shares issued and outstanding as of December 31, 2020 and December 31, 2019, respectively	140	124
Additional paid-in capital	1,725,552	1,023,876
Accumulated deficit	(646,343)	(396,122)
Accumulated other comprehensive income	268	1,145
Total stockholders' equity	1,079,617	629,023
Total liabilities and stockholders' equity	$ 1,227,829	$ 717,802

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

ALLOGENE THERAPEUTICS, INC.
Consolidated Statements of Operations and Comprehensive Loss
(In thousands, except share and per share amounts)

	Years Ended December 31,		
	2020	**2019**	**2018**
Operating expenses:			
Research and development	192,987	144,535	151,860
General and administrative	65,256	57,473	40,982
Total operating expenses	258,243	202,008	192,842
Loss from operations	(258,243)	(202,008)	(192,842)
Other income (expense), net:			
Change in fair value of convertible note payable	—	—	(21,211)
Interest expense	—	—	(3,358)
Interest and other income, net	9,164	17,351	5,789
Other expenses	(1,142)	(268)	—
Total other income (expense), net	8,022	17,083	(18,780)
Loss before income taxes	(250,221)	(184,925)	(211,622)
Benefit from income taxes	—	331	117
Net loss	(250,221)	(184,594)	(211,505)
Other comprehensive income:			
Net unrealized (loss) gain on available-for-sale investments, net of tax	(877)	839	306
Net comprehensive loss	$ (251,098)	$ (183,755)	$ (211,199)
Net loss per share, basic and diluted	$ (2.08)	$ (1.83)	$ (7.31)
Weighted-average number of shares used in computing net loss per share, basic and diluted	120,370,177	101,061,149	28,948,386

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

ALLOGENE THERAPEUTICS, INC.
Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)
(In thousands, except share and per share data)

	Series A Convertible Preferred Stock		Subscriptions Receivables from Preferred Stockholders	Common Stock		Notes Receivable from Common Stockholders	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity (Deficit)
	Shares	Amount		Shares	Amount					
Balance — December 31, 2017	—	—	—	26,249,993	26	(5)	—	(23)	—	(2)
Issuance of Series A convertible preferred shares at $35.06 per share, net of issuance costs of $635	7,557,990	264,365	—	—	—	—	—	—	—	—
Issuance of Series A-1 convertible preferred shares at $35.06 per share in connection with asset acquisition	3,187,772	111,770	—	—	—	—	—	—	—	—
Issuance of Series A-1 convertible preferred shares at $35.06 per share, net of issuance costs of $84	998,225	34,917	—	—	—	—	—	—	—	—
Proceeds received from common stockholders for issuance of founders' stock at inception	—	—	—	—	—	5	—	—	—	5
Subscriptions receivable from preferred stockholders	—	—	(150,000)	—	—	—	—	—	—	(150,000)
Proceeds received from preferred stockholders	—	—	150,000	—	—	—	—	—	—	150,000
Issuance of common stock for early exercise of stock options	—	—	—	5,020,580	5	—	—	—	—	5
Issuance of common stock upon initial public offering, net of issuance costs of $29.3 million	—	—	—	20,700,000	21	—	343,308	—	—	343,329
Conversion of Series A convertible preferred stock	(11,743,987)	(411,052)	—	61,655,922	62	—	410,990	—	—	411,052
Issuance of common stock upon conversion of convertible notes	—	—	—	7,856,176	7	—	141,403	—	—	141,410
Adjustment for fractional shares from forward stock split	—	—	—	—	—	—	(2)	—	—	(2)
Stock-based compensation	—	—	—	—	—	—	18,566	—	—	18,566
Net loss	—	—	—	—	—	—	—	(211,505)	—	(211,505)
Net unrealized gain on available-for- sale investments	—	—	—	—	—	—	—	—	306	306
Balance — December 31, 2018	—	—	—	121,482,671	121	—	914,265	(211,528)	306	703,164
Issuance of common stock upon exercise of stock options and vesting of RSU's	—	—	—	711,623	1	—	2,958	—	—	2,959
Vesting of early exercised common stock	—	—	—	—	—	—	4,590	—	—	4,590
Stock-based compensation	—	—	—	—	—	—	46,063	—	—	46,063
Employee stock purchase plan	—	—	—	107,982	—	—	1,783	—	—	1,783
Issuance of common stock from ATM offering, net of commissions and offering costs of $1.6 million	—	—	—	1,965,082	2	—	54,217	—	—	54,219
Net Loss	—	—	—	—	—	—	—	(184,594)	—	(184,594)
Net unrealized gain on available-for-sale investments	—	—	—	—	—	—	—	—	839	839
Balance — December 31, 2019	—	$ —	$ —	124,267,358	$ 124	$ —	$ 1,023,876	$ (396,122)	$ 1,145	$ 629,023
Issuance of common stock upon exercise of stock options and vesting of RSU's	—	—	—	1,725,695	2	—	8,813	—	—	8,815
Vesting of early exercised common stock	—	—	—	—	—	—	2,840	—	—	2,840
Stock-based compensation	—	—	—	—	—	—	65,261	—	—	65,261
Employee stock purchase plan	—	—	—	175,142	—	—	2,843	—	—	2,843
Issuance of common stock from ATM offering, net of commissions and offering costs of $0.6 million	—	—	—	848,663	1	—	26,202	—	—	26,203
Issuance of common stock from public offering, net of commissions and offering costs of $36.8 million	—	—	—	13,457,447	13	—	595,717	—	—	595,730
Net loss	—	—	—	—	—	—	—	(250,221)	—	(250,221)
Net unrealized loss on available-for-sale investments	—	—	—	—	—	—	—	—	(877)	(877)
Balance — December 31, 2020	—	—	—	140,474,305	140	—	1,725,552	(646,343)	268	1,079,617

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

ALLOGENE THERAPEUTICS, INC.
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Cash flows from operating activities:			
Net loss	$ (250,221)	$ (184,594)	$ (211,505)
Adjustments to reconcile net loss to net cash used in operating activities:			
Acquired in-process research and development	—	—	109,436
Stock-based compensation	65,261	46,063	18,566
Amortization of other intangible assets acquired	151	603	452
Depreciation and amortization	7,435	4,424	1,048
Net amortization/accretion on investment securities	3,250	(3,596)	(1,036)
Non-cash rent expense	3,955	6,777	1,832
Change in fair value of convertible notes payable	—	—	21,211
Debt issuance costs on convertible notes payable	—	—	3,358
Income tax benefit	—	(331)	(117)
Share of losses from equity method investments	1,154	182	—
Other	—	—	6
Changes in operating assets and liabilities:			
Prepaid expenses and other current assets	(3,177)	(5,445)	(8,598)
Other long-term assets	34	(4,374)	(244)
Accounts payable	615	(985)	8,800
Accrued and other current liabilities	18,726	6,351	12,138
Deferred revenue	38,992	—	—
Other long-term liabilities	(1,268)	(2,425)	—
Net cash used in operating activities	(115,093)	(137,350)	(44,653)
Cash flows from investing activities:			
Purchases of property and equipment	(65,958)	(50,791)	(3,234)
Purchase of stock in equity method investment	—	(5,075)	—
Proceeds from sales of investments	4,799	—	2,606
Proceeds from maturities of investments	593,627	472,578	19,235
Purchase of investments	(1,037,591)	(252,628)	(649,307)
Cash paid for acquisition of assets	—	—	(2,098)
Net cash provided by (used in) investing activities	(505,123)	164,084	(632,798)
Cash flows from financing activities:			
Proceeds from issuance of convertible preferred stock, net of issuance costs	—	—	299,281
Proceeds from issuance of convertible notes, net of issuance costs	—	—	116,842
Proceeds from early exercise of stock options	—	—	11,370
Proceeds from issuance of common stock, net of commissions and issuance costs	621,933	54,219	343,689
Proceeds from issuance of common stock and upon exercise of stock options	8,815	2,958	—
Proceeds from issuance of common stock under the employee stock purchase plan	2,843	1,783	—
Net cash provided by financing activities	633,591	58,960	771,182
Net increase in cash, cash equivalents and restricted cash	13,375	85,694	93,731
Cash, cash equivalents and restricted cash — beginning of period	179,425	93,731	—
Cash, cash equivalents and restricted cash — end of period	$ 192,800	$ 179,425	$ 93,731
Non-cash operating, investing and financing activities:			
Common stock issued on conversion of convertible preferred stock	$ —	$ —	$ 411,052
Common stock issued on conversion of convertible notes payable	$ —	$ —	$ 141,410
Series A-1 convertible preferred stock issued in asset acquisition	$ —	$ —	$ 111,770
PP&E and other assets acquired in asset acquisition	$ —	$ —	$ 111,770
Right-of-use asset obtained in exchange for lease liability	$ —	$ 13,827	$ 33,015
Property and equipment purchases in accounts payable and accrued and other current liabilities	$ 8,567	$ 4,668	$ 3,182
Capitalized cloud computing costs included in accounts payable and accrued and other current liabilities	$ 584	$ —	$ —
Deferred offering costs included in accounts payable and accrued and other current liabilities	$ —	$ 135	$ 356
Supplemental disclosure:			
Cash paid for amounts included in the measurement of lease liabilities	$ (6,244)	$ (3,563)	$ (31)
Cash received for amounts related to tenant improvement allowances from lessors	$ 2,809	$ 4,473	$ —

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

ALLOGENE THERAPEUTICS, INC.
Notes to Consolidated Financial Statements

Note 1. Description of Business and Summary of Significant Accounting Policies

Allogene Therapeutics, Inc. (the Company or Allogene) was incorporated on November 30, 2017 in the State of Delaware and is headquartered in South San Francisco, California. Allogene is a clinical-stage immuno-oncology company pioneering the development and commercialization of genetically engineered allogeneic T cell therapies for the treatment of cancer. The Company is developing a pipeline of off-the-shelf T cell product candidates that are designed to target and kill cancer cells.

For the period from November 30, 2017 (inception) to December 31, 2017, the Company incurred $2,000 in start-up costs to establish the Company. Principal operations commenced in April 2018 when Allogene acquired certain assets from Pfizer Inc. (Pfizer) (see Note 6) and completed a Series A and A-1 preferred stock financing (see Note 11).

Public Offerings

In October 2018, the Company completed an initial public offering (IPO) of its common stock. In connection with its IPO, the Company issued and sold 20,700,000 shares of its common stock, which included 2,700,000 shares of its common stock issued pursuant to the over-allotment option granted to the underwriters, at a price to the public of $18.00 per share. As a result of the IPO, the Company received $343.3 million in net proceeds, after deducting underwriting discounts and commissions of $26.1 million and offering expenses of $3.2 million payable by the Company. At the closing of the IPO, 11,743,987 shares of outstanding convertible preferred stock were automatically converted into 61,655,922 shares of common stock and the 2018 Notes (see Note 11) were automatically converted into 7,856,176 shares of common stock. Following the IPO, there were no shares of convertible preferred stock or preferred stock outstanding.

In November 2019, the Company entered into a sales agreement with Cowen and Company, LLC (Cowen), under which the Company may from time to time issue and sell shares of its common stock through Cowen in at-the-market (ATM) offerings for an aggregate offering price of up to $250.0 million. The aggregate compensation payable to Cowen as the Company's sales agent equals up to 3.0% of the gross sales price of the shares sold through it pursuant to the sales agreement. During the year ended December 31, 2020, we sold an aggregate of 848,663 shares of common stock in ATM offerings resulting in net proceeds of $26.2 million.

In June 2020, the Company sold 13,457,447 shares of its common stock, which included 1,755,319 shares sold pursuant to the full exercise of the underwriters' option to purchase additional shares, in an underwritten public offering at a price of $47.00 per share, which resulted in gross proceeds of approximately $632.5 million. Net proceeds to the Company after deducting the underwriting discounts and commissions and other expenses were approximately $595.7 million.

Forward Stock Split

On October 1, 2018, the Company filed an amendment to the Company’s amended and restated certificate of incorporation to effect a forward split of shares of the Company’s common stock on a 1-for-5.25 basis (the Forward Stock Split). In connection with the Forward Stock Split, the conversion ratio for the Company’s outstanding convertible preferred stock was proportionately adjusted such that the common stock issuable upon conversion of such preferred stock was increased in proportion to the Forward Stock Split. The par value of the common stock was not adjusted as a result of the Forward Stock Split. All references to common stock, options to purchase common stock, early exercised options, share data, per share data, convertible preferred stock (to the extent presented on an as-converted to common stock basis) and related information contained in these financial statements have been retrospectively adjusted to reflect the effect of the Forward Stock Split for all periods presented.

Need for Additional Capital

The Company has sustained operating losses and expects to continue to generate operating losses for the foreseeable future. The Company’s ultimate success depends on the outcome of its research and development activities as well as the ability to commercialize the Company’s product candidates. The Company had cash, cash equivalents and investments of $1.0 billion as of December 31, 2020. Since inception through December 31, 2020, the Company has incurred cumulative net losses of $646.3 million. Management expects to incur additional losses in the future to fund its operations and conduct product research and development and recognizes the need to raise additional capital to fully implement its business plan.

The Company intends to raise additional capital through the issuance of equity securities, debt financings or other sources in order to further implement its business plan. However, if such financing is not available at adequate levels, the Company will need to reevaluate its operating plan and may be required to delay the development of its product candidates. The Company expects that its cash and cash equivalents and investments will be sufficient to fund its operations for at least the next 12 months from the date the Company's Annual Report on Form 10-K is filed with the Securities and Exchange Commission (SEC).

The Company cannot at this time predict the specific extent, duration, or full impact that the ongoing COVID-19 pandemic will have on its financial condition and operations, including ongoing and planned clinical trials. The impact of the COVID-19 pandemic on the financial performance of the Company will depend on future developments, including the duration and spread of the pandemic and related governmental advisories and restrictions. These developments and the impact of the COVID-19 pandemic on the financial markets and the overall economy are highly uncertain. If business conditions, financial markets and/or the overall economy are impacted for an extended period, the Company's results may be adversely affected.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP).

In June 2020, the Company formed a wholly-owned, Netherlands-based subsidiary, Allogene Therapeutics, B.V., to help prepare for and assist with the Company's activities in Europe. The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiary. All material intercompany balances and transactions have been eliminated during consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the consolidated financial statements and the reported amounts of expenses during the reporting period. Significant estimates and assumptions made in the accompanying consolidated financial statements include but are not limited to the fair value of common stock, the fair value of stock options, the fair value of investments, the fair value of convertible notes payable upon conversion, income tax uncertainties, and certain accruals. The Company evaluates its estimates and assumptions on an ongoing basis using historical experience and other factors and adjusts those estimates and assumptions when facts and circumstances change. Actual results could differ from those estimates.

Concentration of Credit and other Risks and Uncertainties

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

The Company's investment policy limits investments to certain types of instruments such as certificates of deposit, commercial paper, money market instruments, obligations issued by the U.S. government and U.S. government agencies as well as corporate debt securities, and places restrictions on maturities and concentration by type and issuer. The Company maintains cash balances in excess of amounts insured by the FDIC and concentrated within a limited number of financial institutions. The accounts are monitored by management and management believes that the financial institutions are financially sound, and, accordingly, minimal credit risk exists with respect to these financial institutions. As of December 31, 2020 and 2019, the Company has not experienced any credit losses in such accounts or investments.

The Company is subject to a number of risks common for early-stage biopharmaceutical companies including, but not limited to, dependency on the clinical and commercial success of its product candidates, ability to obtain regulatory approval of its product candidates, the need for substantial additional financing to achieve its goals, uncertainty of broad adoption of its approved products, if any, by physicians and patients, significant competition and untested manufacturing capabilities.

Segments

Operating segments are defined as components of an entity for which separate financial information is available and that is regularly reviewed by the Chief Operating Decision Maker (CODM) in deciding how to allocate resources to an individual segment and in assessing performance. The Company's CODM is its Chief Executive Officer. The Company has determined it operates in a single operating segment and has one reportable segment.

Cash, Cash Equivalents and Restricted Cash

The Company considers all highly liquid investments purchased with original maturities of three months or less from the purchase date to be cash equivalents. Cash equivalents consist primarily of amounts invested in bank money market accounts and money market mutual funds.

The Company has issued letters of credit under separate lease and other agreements which have been collateralized by restricted cash. This cash is classified as long-term restricted cash on the accompanying consolidated balance sheet based on the terms of the underlying agreements.

Investments

Investments are available-for-sale and are carried at estimated fair value. The Company's valuations of marketable securities are generally derived from independent pricing services based upon quoted prices in active markets for similar securities, with prices adjusted for yield and number of days to maturity, or based on industry models using data inputs, such as interest rates and prices that can be directly observed or corroborated in active markets. Management determines the appropriate classification of its investments in debt securities at the time of purchase and at the end of each reporting period. Investments with original maturities of less than three months at the date of purchase are classified as cash and cash equivalents. Investments with original maturities beyond three months at the date of purchase and which mature at, or less than twelve months from the consolidated balance sheet date are classified as current.

Unrealized gains and losses are excluded from earnings and are reported as a component of other comprehensive income. The Company periodically evaluates whether declines in fair values of its available-for-sale securities below their book value are other-than-temporary. This evaluation consists of several qualitative and quantitative factors regarding the severity and duration of the unrealized loss as well as the Company's ability and intent to hold the available-for-sale security until a forecasted recovery occurs. Additionally, the Company assesses whether it has plans to sell the security or it is more likely than not it will be required to sell any available-for-sale securities before recovery of its amortized cost basis. Realized gains and losses and declines in fair value judged to be other than temporary, if any, on available-for-sale securities are included in interest and other income, net. The cost of investments sold is based on the specific-identification method. Interest income on investments is included in interest and other income, net.

Fair Value Measurement

Assets and liabilities recorded at fair value on a recurring basis in the consolidated balance sheets are categorized based upon the level of judgment associated with the inputs used to measure their fair values. Fair value is defined as the exchange price that would be received for an asset or an exit price that would be paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

Level 1—Observable inputs such as unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2—Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable for the asset or liability. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

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

Property and Equipment, Net

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation is computed on a straight-line basis over the estimated useful lives of the related assets, generally three to seven years. Maintenance and

repairs are charged to operations as incurred. Upon sale or retirement of assets, the cost and related accumulated depreciation are removed from the consolidated balance sheet and the resulting gain or loss is reflected in other expense.

The Company has determined the estimated life of assets to be as follows:

Laboratory equipment	5 years
Computer equipment and purchased software	3 - 5 years
Fixtures and furniture	7 years
Leasehold improvements	Shorter of lease term or useful life

The Company adopted Accounting Standards Update ("ASU") No. 2018-15, *Intangibles – Goodwill and other – Internal-Use Software (Subtopic 350-40)* on January 1, 2020 on a prospective basis. The Company capitalizes implementation costs associated with internal use cloud computing arrangements in alignment with ASC 350-40 internal-use software. Costs incurred in preliminary project stage and post implementation stage are expensed as incurred. Costs incurred during the application development stage of implementation are capitalized in other long term assets on the consolidated balance sheet. Capitalized implementation costs from cloud computing arrangements are amortized over the term of the cloud-based service arrangement.

Leases

The Company early adopted ASU No. 2016-2, *Leases* on January 1, 2018. For its long-term operating leases, the Company recognizes a right-of-use asset and a lease liability on its consolidated balance sheets. The lease liability is determined as the present value of future lease payments using an estimated rate of interest that the Company would pay to borrow equivalent funds on a collateralized basis at the lease commencement date. The right-of-use asset is based on the liability adjusted for any prepaid or deferred rent. The lease term at the commencement date is determined by considering whether renewal options and termination options are reasonably assured of exercise.

Rent expense for the operating lease is recognized on a straight-line basis over the lease term and is included in operating expenses on the consolidated statements of operations and comprehensive loss. Variable lease payments include lease operating expenses.

The Company elected to exclude from its consolidated balance sheets recognition of leases having a term of 12 months or less (short-term leases) and elected to not separate lease components and non-lease components for its long-term real-estate leases.

Equity Method Investments

The Company uses the equity method of accounting for equity investments in companies if the investment provides the ability to exercise significant influence, but not control, over operating and financial policies of the investee. The Company's proportionate share of the net income or loss of these companies is included in other expenses in the consolidated statement of operations. Judgment regarding the level of influence over each equity method investment includes considering key factors such as our ownership interest, representation on the board of directors, participation in policy-making decisions and material purchase and sale transactions.

The Company evaluates equity method investments for impairment whenever events or changes in circumstances indicate that the carrying amount of the investment might not be recoverable. Factors considered when reviewing an equity method investment for impairment include the length of time (duration) and the extent (severity) to which the fair value of the equity method investment has been less than cost, the investee’s financial condition and near-term prospects and the intent and ability to hold the investment for a period of time sufficient to allow for anticipated recovery. An impairment that is other-than-temporary is recognized in the period identified.

Variable Interest Entities

For entities in which the Company has variable interests, the Company focuses on identifying if one of the entities is the primary beneficiary through having the power to direct the activities that most significantly impact the variable interest entity’s economic performance and having the obligation to absorb losses or the right to receive benefits from the variable

interest entity. If the Company is the primary beneficiary of a variable interest entity, the assets, liabilities, and results of operations of the variable interest entity will be included in the Company's consolidated financial statements. The Company did not consolidate any variable interest entities in any of the periods presented because the Company determined that it was not the primary beneficiary.

Accrued Research and Development Costs

The Company records accrued liabilities for estimated costs of research and development activities conducted by collaboration partners and third-party service providers, which include the conduct of preclinical studies and clinical trials, and contract manufacturing activities. The Company records the estimated costs of research and development activities based upon the estimated amount of services provided but not yet invoiced and includes these costs in accrued and other current liabilities on the consolidated balance sheets and within research and development expenses on the consolidated statements of operations and comprehensive loss.

The Company accrues for these costs based on factors such as estimates of the work completed and in accordance with agreements established with its collaboration partners and third-party service providers. The Company makes significant judgments and estimates in determining the accrued liabilities balance at the end of each reporting period. As actual costs become known, the Company adjusts its accrued liabilities. The Company has not experienced any material differences between accrued costs and actual costs incurred since its inception.

Income Taxes

Income taxes are accounted for under the asset and liability method. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Management makes an assessment of the likelihood that the resulting deferred tax assets will be realized. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized. Due to the Company's historical operating performance and net losses, the net deferred tax assets have been fully offset by a valuation allowance.

The Company recognizes uncertain income tax positions at the largest amount that is more likely than not to be sustained upon audit by the relevant taxing authority. An uncertain income tax position will not be recognized if it has less than a 50% likelihood of being sustained. Changes in recognition or measurement are reflected in the period in which judgment occurs. The Company's policy is to recognize interest and penalties related to the underpayment of income taxes as a component of the provision for income taxes.

Stock-Based Compensation

The Company measures its stock-based awards granted to employees, consultants and directors based on the estimated fair values of the awards and recognizes the compensation over the requisite service period. The Company uses the Black-Scholes option-pricing model to estimate the fair value of its stock-based awards. Stock-based compensation is recognized using the straight-line method. As the stock compensation expense is based on awards ultimately expected to vest, it is reduced by forfeitures. The Company accounts for forfeitures as they occur.

Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of shares of common stock outstanding for the period, without consideration for potential dilutive shares of common stock. Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share since the effects of potentially dilutive securities are antidilutive. Shares of common stock subject to repurchase are excluded from the weighted-average shares.

Comprehensive Loss

Comprehensive loss includes net loss and certain changes in stockholders' equity (deficit) that are excluded from net loss. For the years ended December 31, 2020, 2019 and 2018 this was comprised of unrealized gains and losses, net of tax, on the Company's investments.

Definite-Lived Intangible Assets

Identifiable intangible assets consist of in-process research and development and workforce associated with the Pfizer asset acquisition. Intangible assets with finite lives are amortized over their estimated useful lives on a straight-line basis, generally two years. Acquired in-process research and development intangible assets with no alternative future use are charged to research and development expense when acquired. The straight-line method of amortization represents the Company's best estimate of the distribution of the economic value of the identifiable intangible assets. Intangible assets are carried at cost less accumulated amortization. Amortization of intangible assets is included in research and development expenses.

Impairment of Long-Lived Assets

Long-lived assets are reviewed annually for impairment or whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by comparison of the carrying amount of an asset group to the future net undiscounted cash flows that the assets are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the projected discounted future net cash flows arising from the asset. There were impairment losses related to equipment disposals of zero and $0.2 million for the years ended December 31, 2020 and 2019, respectively.

Revenue Recognition

In the near future, the Company's revenue is anticipated to be generated through collaboration research and license agreements. The terms of these agreements are anticipated to contain multiple deliverables which may include (i) grant of licenses, (ii) transfer of know-how, (iii) research and development activities, (iii) clinical manufacturing and, (iv) product supply. The payment terms of these agreements may include nonrefundable upfront fees, payments for research and development activities, payments based upon the achievement of certain milestones, royalty payments based on product sales derived from the collaboration, and payments for supplying product.

The Company will analyze its collaboration arrangements to assess whether they are within the scope of ASC 808, Collaborative Arrangements (ASC 808) to determine whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities. This assessment is performed throughout the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For collaboration arrangements within the scope of ASC 808 that contain multiple elements, the Company first determines which elements of the collaboration are deemed to be within the scope of ASC 808 and those that are more reflective of a vendor-customer relationship and, therefore, within the scope of Topic 606, Revenue from Contracts with Customers (ASC 606). For elements of collaboration arrangements that are accounted for pursuant to ASC 808, an appropriate recognition method is determined and applied consistently, generally by analogy to Topic 606.

For elements of those arrangements that the Company determines should be accounted for under ASC 606, the Company assesses which activities in the collaboration agreements are performance obligations that should be accounted for separately and determine the transaction price of the arrangement, which includes the assessment of the probability of achievement of future milestones and other potential consideration. A performance obligation represents a promise in a contract to transfer a distinct good or service to a customer, which represents a unit of accounting in accordance with ASC 606. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. The Company considers a performance obligation satisfied once the Company has transferred control of a good or service to the customer, meaning the customer has the ability to use and obtain the benefit of the good or service. A portion of the consideration should be allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The total consideration which the Company expects to collect in exchange for the Company's products is an estimate and may be fixed or variable. The Company constrains the estimated variable consideration when it assesses it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. The transaction price is re-evaluated, including the estimated variable consideration included in the transaction price and all constrained amounts, in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The allocation of the transaction price is performed based on standalone selling prices, which are based on estimated amounts that the Company would charge for a performance obligation if it were sold separately. Revenue is recognized when, or as, performance obligations in the contracts are satisfied, in the amount reflecting the expected consideration to be received from the goods or services transferred to the customers. Funds received in advance are recorded as deferred revenue and are recognized as the related performance obligation is satisfied.

Research and Development Expenses

Research and development costs are expensed as incurred and consist of salaries and benefits, including associated stock-based compensation, and laboratory supplies and facility costs, as well as fees paid to other entities that conduct certain research and development activities on the Company's behalf. Research and development expenses also include costs incurred for internal and sponsored collaborative research and development activities. Costs associated with co-development activities performed under the various license and collaboration agreements are included in research and development expenses.

Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are capitalized and then expensed as the related goods are delivered or the services are performed.

Note 2. Recent Accounting Guidance

Recently Adopted Accounting Pronouncements

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments* and also issued subsequent amendments to the initial guidance: ASU 2018-19, ASU 2019-04, ASU 2019-05, and ASU 2019-11. The standard requires measurement and recognition of expected credit losses for financial assets by requiring an allowance to be recorded as an offset to the amortized cost of such assets. For available-for-sale debt securities, expected credit losses should be estimated when the fair value of the debt securities is below their associated amortized costs. This standard became effective for fiscal years beginning after December 15, 2019, with early adoption permitted beginning the first quarter of 2019. The Company's financial instruments that are in the scope of ASU 2016-13 include, but are not limited to, other receivables and available-for-sale debt securities. The Company adopted this standard on January 1, 2020 and applied the modified retrospective approach. Adoption of the new guidance had no significant impact on the Company's consolidated financial statements.

In August 2018, the FASB issued Accounting Standards Update No. 2018-15, *Intangibles – Goodwill and other – Internal-Use Software (Subtopic 350-40)*, which amended its guidance for costs of implementing a cloud computing service arrangement and aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This new standard also requires customers to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the term of the hosting arrangement. This standard became effective for fiscal years beginning after December 15, 2019, with early adoption permitted. The Company adopted this standard on January 1, 2020, on a prospective basis for applicable implementation costs. As of December 31, 2020, $4.2 million of implementation costs related to cloud computing service arrangements were capitalized and included in other long term assets on the consolidated balance sheets.

In November 2018, the FASB issued ASU 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606*, which clarifies that certain transactions between participants in a collaborative arrangement should be accounted for under ASC 606 when the counterparty is a customer. In addition, Topic 808 precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer for that transaction. This standard is effective for fiscal years beginning after December 31, 2019, with early adoption permitted. The Company adopted this standard on January 1, 2020. Adoption of the new guidance had no significant impact on the Company's consolidated financial statements.

In December 2019, the FASB issued Accounting Standards Update No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes (ASU 2019-12)*, which simplifies the accounting for income taxes, eliminates certain exceptions within ASC 740, Income Taxes, and clarifies certain aspects of the current guidance to promote consistency among reporting entities. This standard is effective for fiscal years beginning after December 15, 2020, with early adoption permitted. The Company early adopted this standard as of January 1, 2020 on a prospective basis in accordance with ASC 250, Accounting Changes and Error Corrections. The adoption resulted in the Company no longer needing to determine the tax effect from unrealized gains on available for sale securities, which previously had been disclosed in the consolidated statement of operations as a benefit from income taxes. Adoption of the new guidance had no significant impact on the Company's consolidated financial statements.

Recent Accounting Pronouncements Not Yet Adopted

In January 2020, the FASB issues Accounting Standard Update No. 2020-01, *Investments – Equity Securities (Topic 321), Investments – Equity Method and Joint Ventures (Topic 323)*, which clarifies the interactions between topics 321 and 323 in applying or discontinuing the equity method of accounting for investments. This guidance will be effective for the Company in the first quarter of 2021, and early adoption is permitted. The Company is currently evaluating the impact of the new guidance on its consolidated financial statements.

Note 3. Fair Value Measurements

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

The Company measures and reports its cash equivalents, restricted cash, investments and convertible notes payable at fair value.

Money market funds are measured at fair value on a recurring basis using quoted prices and are classified as Level 1. Investments are measured at fair value based on inputs other than quoted prices that are derived from observable market data and are classified as Level 2 inputs, except for investments in U.S. treasury securities which are classified as Level 1.

There were no Level 3 assets or liabilities at December 31, 2020 or 2019.

Financial assets subject to fair value measurements on a recurring basis and the level of inputs used in such measurements by major security type as of December 31, 2020 are presented in the following table:

	December 31, 2020			
	Level 1	Level 2	Level 3	Fair Value
	(in thousands)			
Financial Assets:				
Money market funds [1]	$ 102,039	$ —	$ —	$ 102,039
Commercial paper	—	58,975	—	58,975
Corporate bonds	—	262,757	—	262,757
U.S. treasury securities	446,996	—	—	446,996
U.S. agency securities	—	80,039	—	80,039
Total financial assets	$ 549,035	$ 401,771	$ —	$ 950,806

[1] Included within cash and cash equivalents on the Company's consolidated balance sheet

Financial assets subject to fair value measurements on a recurring basis and the level of inputs used in such measurements by major security type as of December 31, 2019 are presented in the following table:

	December 31, 2019			
	Level 1	Level 2	Level 3	Fair Value
	(in thousands)			
Financial Assets:				
Money market funds [1]	$ 122,900	$ —	$ —	$ 122,900
Corporate bonds	—	205,011	—	205,011
U.S. treasury securities	181,894	—	—	181,894
U.S. agency securities	—	25,824	—	25,824
Certificates of deposit	—	1,000	—	1,000
Total financial assets	$ 304,794	$ 231,835	$ —	$ 536,629

[1] Included within cash and cash equivalents on the Company's consolidated balance sheet

The carrying amounts of accounts payable and accrued liabilities approximate their fair values due to their short-term maturities. The Company's Level 2 securities are valued using third-party pricing sources. The pricing services utilize industry standard valuation models, including both income and market-based approaches, for which all significant inputs are observable, either directly or indirectly.

There were no transfers of assets between the fair value measurement levels during the years ended December 31, 2020 or 2019.

Note 4. Investments

The fair value and amortized cost of cash equivalents and available-for-sale securities by major security type as of December 31, 2020 are presented in the following table:

	December 31, 2020			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$ 102,039	$ —	$ —	$ 102,039
Commercial paper	58,969	8	(2)	58,975
Corporate bonds	262,349	444	(36)	262,757
U.S. treasury securities	446,726	282	(12)	446,996
U.S. agency securities	80,012	30	(3)	80,039
Total cash equivalents and investments	$ 950,095	$ 764	$ (53)	$ 950,806
Classified as:				
Cash equivalents				$ 102,039
Short-term investments				644,559
Long-term investments				204,208
Total cash equivalents, and investments				$ 950,806

The fair value and amortized cost of cash equivalents and available-for-sale securities by major security type as of December 31, 2019 are presented in the following table:

	December 31, 2019			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in thousands)			
Money market funds	$ 122,900	$ —	$ —	$ 122,900
Corporate bonds	204,144	871	(4)	205,011
U.S. treasury securities	181,340	557	(3)	181,894
U.S. agency securities	25,658	167	(1)	25,824
Certificates of deposit	1,000	—	—	1,000
Total cash equivalents and investments	$ 535,042	$ 1,595	$ (8)	$ 536,629
Classified as:				
Cash equivalents				$ 122,900
Short-term investments				355,407
Long-term investments				58,322
Total cash equivalents, and investments				$ 536,629

The Company believes that it is more-likely-than-not that investments in an unrealized loss position will be held until maturity and all interest and principal will be received. The Company does not intent to sell these investments and it is not more likely than not that the Company will be required to sell the investment before recovery of its amortized cost basis.

The fair values of available-for-sale debt investments by contractual maturity as of December 31, 2020 and 2019 were as follows:

	December 31,	
	2020	2019
	(in thousands)	
Due in 1 year or less	$ 644,559	$ 355,407
Due in 1 - 2 years	148,211	58,322
Due in 3 years	55,997	—
Instruments not due at a single maturity date	102,039	122,900
Total cash equivalents and investments	$ 950,806	$ 536,629

As of December 31, 2020 and 2019, the remaining contractual maturities of available-for-sale securities were less than three years and two years, respectively. There have been no significant realized losses on available-for-sale securities for the years ended December 31, 2020, 2019 and 2018. As of December 31, 2020 and 2019, unrealized losses on available-for-sale investments are not attributed to credit risk. The Company believes that it is more-likely-than-not that investments in an unrealized loss position will be held until maturity and all interest and principal will be received. The Company believes that an allowance for credit losses is unnecessary because the unrealized losses on certain of the Company's marketable securities are due to market factors. As of December 31, 2020 and 2019, securities with a fair value of $5.0 million and zero respectively, were in a net unrealized loss position for more than 12 months. To date, the Company has not recorded any impairment charges on marketable securities.

As of December 31, 2020 and 2019, the Company recognized $2.8 million and $2.4 million of accrued interest receivable from available-for-sale investments within prepaid expenses and other current assets on the consolidated balance sheets.

Note 5. Balance Sheet Components

Property and Equipment, Net

	December 31,	
	2020	2019
	(in thousands)	
Construction in progress	$ 68,944	$ 12,390
Leasehold improvements	31,518	29,924
Laboratory equipment	23,810	13,117
Computers equipment and purchased software	4,088	3,726
Furniture and fixtures	3,388	2,764
Total	131,748	61,921
Less: accumulated depreciation	(12,908)	(5,472)
Total property and equipment, net	$ 118,840	$ 56,449

Depreciation expense for the years ended December 31, 2020, 2019 and 2018 was $7.4 million, $4.6 million and $1.0 million respectively. Disposals of property and equipment were zero , $0.2 million and zero for the years ended December 31, 2020, 2019 and 2018, respectively.

Accrued Liabilities

Accrued liabilities consist of the following:

	December 31,	
	2020	2019
	(in thousands)	
Accrued compensation and related benefits	$ 15,943	$ 9,560
Accrued research and development expenses	13,887	4,833
Accrued property and equipment	7,475	3,575
Unvested shares liability	2,842	2,843
Other	4,791	3,018
Total accrued and other current liabilities	$ 44,938	$ 23,829

Note 6. Asset Acquisition

In April 2018, the Company entered into an Asset Contribution Agreement (the Pfizer Agreement) with Pfizer pursuant to which the Company acquired certain assets, including certain contracts described in Note 7, and intellectual property for the development and administration of chimeric antigen receptor (CAR) T cells for the treatment of cancer.

As consideration for the purchased assets, the Company issued Pfizer 3,187,772 shares of its Series A-1 convertible preferred stock with an estimated fair value of $111.8 million or $35.06 per share. The Company also incurred $2.1 million of direct expenses related to the asset acquisition, bringing the total consideration to $113.9 million. The fair value of the Series A-1 convertible preferred stock was established using the price per share paid by third-party investors in the concurrent closing of the Series A and A-1 convertible preferred stock financing at $35.06 per share as well as the price per share paid by Pfizer to purchase additional shares of Series A-1 convertible preferred stock at $35.06 per share at the same time and at the same price per share as the rest of Series A and A-1 shares sold in such financing (see Note 11 for additional details). The Series A-1 convertible preferred shares issued to Pfizer had the same rights, preferences and privileges as the Series A convertible preferred shares issued to the third-party investors.

The Company accounted for the transaction as an asset acquisition as substantially all of the estimated fair value of the gross assets acquired was concentrated in a single identified asset, anti-CD19 CAR T cell therapy, thus satisfying the requirements of the screen test in ASU 2017-1. The assets acquired in the transaction were measured based on the fair value of the Series A-1 convertible preferred stock issued to Pfizer and direct transaction costs of $2.1 million, as the fair value of the equity given was more readily determinable than the fair value of the assets received. The following table summarizes the fair value of assets acquired (in thousands):

Property and equipment	$ 3,258
In-process research and development (IPR&D):	
Anti-CD19 CAR T cell therapy	103,936
Anti-BCMA CAR T cell therapy	5,500
Assembled workforce	1,206
Total assets acquired	$ 113,900

The estimated fair values of anti-CD19 CAR T cell therapy and anti-BCMA CAR T cell therapy were determined using a risk-adjusted discounted cash flow approach, which used the present value of the direct cash flows expected to be generated by anti-CD19 CAR T cell therapy and anti-BCMA CAR T cell therapy during their estimated economic lives, net of returns on contributory assets such as working capital, property and equipment, and the assembled workforce. The discount rate of 16.5% was based on rates of return available from alternative investments of similar type and quality as of the valuation date. The remaining IPR&D targets were determined to be more conceptual in nature with nominal value being attributed to them. The estimate of the fair value of the assembled workforce was determined using a replacement cost approach, based on the estimated cost of recruiting and training an equivalent workforce as of the acquisition date.

The amount allocated to intangible IPR&D assets was charged to research and development expenses as these assets had no alternative future use at the time of the acquisition transaction. The remaining intangible asset relates to the assembled workforce which was capitalized and is being amortized over its estimated economic life of two years to research and development expenses.

In addition, under the terms of the Pfizer Agreement, the Company was also required to make milestone payments to Pfizer of $30.0 million or $60.0 million per target (depending on the target, and up to $840.0 million in the aggregate for all targets) upon successful completion of certain regulatory and sales milestones for certain targets covered by the Pfizer Agreement. No milestone payments were made or became due in the years ended December 31, 2020, 2019 and 2018. These contingent payments were not part of the consideration for the purchased assets.

As part of the asset acquisition, the Company also assumed licensing agreements Pfizer had entered into with two third-party entities holding certain intellectual property. Both agreements cover use of the intellectual property held by the parties and certain research collaboration activities. See Note 7 for additional details on these agreements.

Under the Pfizer Agreement, the Company was required to use commercially reasonable efforts to develop and seek regulatory approval in and for the United States and the European Union for certain products covered by the Pfizer Agreement and to commercialize each product covered by the Pfizer Agreement in the applicable royalty territory in which regulatory approval for such product has been obtained.

Note 7. License and Collaboration Agreements

Asset Contribution Agreement with Pfizer

In connection with the Pfizer Agreement (see Note 6), the Company is required to make milestone payments upon successful completion of regulatory and sales milestones on a target-by-target basis for the targets including CD19 and B-cell maturation antigen (BCMA), covered by the Pfizer Agreement. The aggregate potential milestone payments upon successful completion of various regulatory milestones in the United States and the European Union are $30.0 million or $60.0 million, depending on the target, with aggregate potential regulatory and development milestones of up to $840.0 million, provided that the Company is not obligated to pay a milestone for regulatory approval in the European Union for an anti-CD19 allogeneic CAR T cell product, to the extent Servier has commercial rights to such territory. The aggregate potential milestone payments upon reaching certain annual net sales thresholds in North America, Europe, Asia, Australia and Oceania (the Territory) for a certain number of targets covered by the Pfizer Agreement are $325.0 million per target. The sales milestones in the foregoing sentence are payable on a country-by-country basis until the last to expire of any Pfizer Royalty Term, as described below, for any product in such country in the Territory. In October 2019, the Territory was expanded to all countries in the world. No milestone or royalty payments were made in the years ended December 31, 2020, 2019 and 2018.

Pfizer is also eligible to receive, on a product-by-product and country-by-country basis, royalties in single-digit percentages on annual net sales for products covered by the Pfizer Agreement or that use certain Pfizer intellectual property and for which an IND is first filed on or before April 6, 2023. The Company’s royalty obligation with respect to a given product in a given country begins upon the first sale of such product in such country and ends on the later of (i) expiration of the last claim of any applicable patent or (ii) 12 years from the first sale of such product in such country.

Research Collaboration and License Agreement with Cellectis

As part of the Pfizer Agreement (see Note 6), Pfizer assigned to the Company a Research Collaboration and License Agreement (the Original Cellectis Agreement) with Cellectis S.A. (Cellectis). On March 8, 2019, the Company entered into a License Agreement (the Cellectis Agreement) with Cellectis. In connection with the execution of the Cellectis Agreement, on March 8, 2019, the Company and Cellectis also entered into a letter agreement (the Letter Agreement), pursuant to which the Company and Cellectis agreed to terminate the Original Cellectis Agreement. The Original Cellectis Agreement included a research collaboration to conduct discovery and pre-clinical development activities to generate CAR T cells directed at targets selected by each party, which was completed in June 2018.

Pursuant to the Cellectis Agreement, Cellectis granted to the Company an exclusive, worldwide, royalty-bearing license, on a target-by-target basis, with sublicensing rights under certain conditions, under certain of Cellectis’s intellectual property, including its TALEN and electroporation technology, to make, use, sell, import, and otherwise exploit and commercialize CAR T products directed at certain targets, including BCMA, FLT3, DLL3 and CD70 (the Allogene Targets), for human oncologic therapeutic, diagnostic, prophylactic and prognostic purposes. In addition, certain Cellectis intellectual property rights granted by Cellectis to the Company and to Servier pursuant to the Exclusive License and Collaboration Agreement by and between Servier and Pfizer, dated October 30, 2016, which Pfizer assigned to the Company in April 2018, will survive the termination of the Original Cellectis Agreement.

Pursuant to the Cellectis Agreement, the Company granted Cellectis a non-exclusive, worldwide, royalty-free, perpetual and irrevocable license, with sublicensing rights under certain conditions, under certain of the Company's intellectual

property, to make, use, sell, import and otherwise commercialize CAR T products directed at certain targets (the Cellectis Targets).

The Cellectis Agreement provides for development and sales milestone payments by the Company of up to $185.0 million per product that is directed against an Allogene Target, with aggregate potential development and sales milestone payments totaling up to $2.8 billion. Cellectis is also eligible to receive tiered royalties on annual worldwide net sales of any products that are commercialized by the Company that contain or incorporate, are made using or are claimed or covered by, Cellectis intellectual property licensed to the Company under the Cellectis Agreement (the Allogene Products), at rates in the high single-digit percentages. Such royalties may be reduced, on a licensed product-by-licensed product and country-by-country basis, for generic entry and for payments due under licenses of third party patents. Pursuant to the Cellectis Agreement, and subject to certain exceptions, the Company is required to indemnify Cellectis against all third party claims related to the development, manufacturing, commercialization or use of any Allogene Product or arising out of the Company's material breach of the representations, warranties or covenants set forth in the Cellectis Agreement, and Cellectis is required, subject to certain exceptions, to indemnify the Company against all third party claims related to the development, manufacturing, commercialization or use of CAR T products directed at Cellectis Targets or arising out of Cellectis's material breach of the representations, warranties or covenants set forth in the Cellectis Agreement.

The royalties are payable, on a licensed product-by-licensed product and country-by-country basis, until the later of (i) the expiration of the last to expire of the licensed patents covering such product; (ii) the loss of regulatory exclusivity afforded such product in such country, and (iii) the tenth anniversary of the date of the first commercial sale of such product in such country; however, in no event shall such royalties be payable, with respect to a particular licensed product, past the twentieth anniversary of the first commercial sale for such product.

Depending on the Cellectis Target, the Company has a right of first refusal or right of first negotiation to purchase or license from Cellectis rights to develop and commercialize products against such Cellectis Targets.

Under the Cellectis Agreement, the Company has certain diligence obligations to progress the development of CAR T product candidates and to commercialize one CAR T product per Allogene Target in one major market country where the Company has received regulatory approval. If the Company materially breaches any of its diligence obligations and fails to cure within 90 days, then with respect to certain targets, such target will cease to be an Allogene Target and instead will become a Cellectis Target.

Unless earlier terminated in accordance with its terms, the Cellectis Agreement will expire on a product-by-product and country-by-country basis, upon expiration of all royalty payment obligations with respect to such licensed product in such country. The Company has the right to terminate the Cellectis Agreement at will upon 60 days' prior written notice, either in its entirety or on a target-by-target basis. Either party may terminate the Cellectis Agreement, in its entirety or on a target-by-target basis, upon 90 days' prior written notice in the event of the other party's uncured material breach. The Cellectis Agreement may also be terminated by the Company upon written notice at any time in the event that Cellectis becomes bankrupt or insolvent or upon written notice within 60 days of a consummation of a change of control of Cellectis.

All costs the Company incurred in connection with this agreement were recognized as research and development expenses in the consolidated statement of operations. For the year ended December 31, 2019, $5.0 million of costs were incurred related to the achievement of a clinical development milestone under this agreement. No clinical development milestones were achieved for the years ended December 31, 2020 and 2018.

License and Collaboration Agreement with Servier

As part of the Pfizer Agreement (see Note 6), Pfizer assigned to the Company an Exclusive License and Collaboration Agreement (the Servier Agreement), with Les Laboratoires Servier SAS and Institut de Recherches Internationales Servier SAS (collectively, Servier) to develop, manufacture and commercialize certain allogeneic anti-CD19 CAR T cell product candidates, including UCART19, in the United States with the option to obtain the rights over additional anti-CD19 product candidates and for allogeneic CAR T cell product candidates directed against one additional target. In October 2019, the Company agreed to waive its rights to the one additional target.

Under the Servier Agreement, the Company has an exclusive license to develop, manufacture and commercialize UCART19 in the field of anti-tumor adoptive immunotherapy in the United States, with an exclusive option to obtain the same rights for additional product candidates in the United States and, if Servier does not elect to pursue development or commercialization of those product candidates in certain markets outside of the United States pursuant to its license, outside of the United States as well. The Company is not required to make any additional payments to Servier to exercise an option. If the

Company opts-in to another product candidate, Servier has the right to obtain rights to such product candidate outside the United States and to share development costs for such product candidate.

Under the Servier Agreement, the Company is required to use commercially reasonable efforts to develop and obtain marketing approval in the United States in the field of anti-tumor adoptive immunotherapy for at least one product directed against CD19, and Servier is required to use commercially reasonable efforts to develop and obtain marketing approval in the European Union, and one other country in a group of specified countries outside of the European Union and the United States, in the field of anti-tumor adoptive immunotherapy for at least one allogeneic adaptive T cell product directed against a certain Company-selected target.

For product candidates that the Company is co-developing with Servier, including UCART19, ALLO-501 and ALLO-501A, the Company is responsible for 60% of the specified development costs and Servier is responsible for the remaining 40% of the specified development costs under the applicable global research and development plan. Subject to certain restrictions, each party has the right to conduct activities that are specific to its territory outside the global research and development plan at such party's sole expense. In addition, each party is solely responsible for commercialization activities in its territory at such party's sole expense.

The Company is required to make milestone payments to Servier upon successful completion of regulatory and sales milestones. The Servier Agreement provides for aggregate potential payments by the Company to Servier of up to $137.5 million upon successful completion of various regulatory milestones, and aggregate potential payments by the Company to Servier of up to $78.0 million upon successful completion of various sales milestones. Similarly, Servier is required to make milestone payments upon successful completion of regulatory and sales milestones for products directed at the Allogene-target covered by the Servier Agreement that achieves such milestones. The total potential payments that Servier is obligated to make to the Company under the Servier Agreement upon successful completion of regulatory and sales milestones are $42 million and €70.5 million ($86.6 million), respectively. The foregoing milestones are subject to certain adjustments if the Company obtains rights for certain products outside of the United States upon Servier's election not to pursue such rights.

Each party is also eligible to receive tiered royalties on annual net sales in countries within the paying party's respective territory of any licensed products that are commercialized by such party that are directed at the targets licensed by such party under the Servier Agreement. The royalty rates are in a range from the low tens to the high teen percentages. Such royalties may be reduced for interchangeable drug entry, expiration of patent rights and amounts paid pursuant to licenses of third-party patents. The royalty obligation for each party with respect to a given licensed product in a given country in each party's respective territory (the Servier Royalty Term) begins upon the first commercial sale of such product in such country and ends after a defined number of years.

Unless earlier terminated in accordance with the Servier Agreement, the Servier Agreement will continue, on a licensed product-by-licensed product and country-by-country basis, until the Servier Royalty Term with respect to the sale of such licensed product in such country expires.

For the year ended December 31, 2020, the Company recorded $8.5 million of net cost recoveries under the cost-sharing terms as a reduction to research and development expenses. For the years ended December 31, 2019 and 2018, the Company recorded $7.3 million and $4.2 million, respectively, of costs incurred under the collaboration agreement with Servier as research and development expenses. As of December 31, 2020, amounts due from Servier of $3.8 million were recorded in other current assets in the accompanying consolidated balance sheets. As of December 31, 2019, amounts due to Servier of $2.2 million were recorded in accrued and other current liabilities in the accompanying consolidated balance sheets.

Research Collaboration and License Agreement with Notch Therapeutics

On November 1, 2019, the Company entered into a Collaboration and License Agreement (the Notch Agreement) with Notch Therapeutics Inc. (Notch), pursuant to which Notch granted to Allogene an exclusive, worldwide, royalty-bearing, sublicensable license under certain of Notch's intellectual property to develop, make, use, sell, import, and otherwise commercialize therapeutic gene-edited T cell and/or natural killer (NK) cell products from induced pluripotent stem cells directed at certain CAR targets for initial application in non-Hodgkin lymphoma, acute lymphoblastic leukemia and multiple myeloma. In addition, Notch has granted Allogene an option to add certain specified targets to its exclusive license in exchange for an agreed per-target option fee.

The Notch Agreement includes a research collaboration to conduct research and pre-clinical development activities to generate engineered cells directed to Allogene's exclusive targets, which will be conducted in accordance with an agreed research plan and budget under the oversight of a joint development committee. Allogene will reimburse Notch's costs incurred

in accordance with such plan and budget. The term of the research collaboration will expire upon the earlier of (i) the fifth anniversary of the date of the Notch Agreement, (ii) at Allogene's election, following the joint development committee's determination that for each exclusive target, Notch has met certain success criteria, or (iii) the joint development committee's determination that the research collaboration cannot be reasonably pursued against any exclusive target due to technical infeasibility or safety issues.

In connection with the execution of the Notch Agreement, Allogene made an upfront payment to Notch of $10.0 million in return for a license to access Notch's technology in order to conduct research pursuant to the Notch Agreement. The Company recognized a research and development expense of $10 million during the year ended December 31, 2019 as the license had no foreseeable alternative future use. In addition, Allogene made a $5.0 million investment in Notch's series seed convertible preferred stock, resulting in Allogene having a 25% ownership interest in Notch's outstanding capital stock on a fully diluted basis immediately following the investment. In connection with this investment, David Chang, M.D., Ph.D., the Company's President, Chief Executive Officer and Board member, was appointed to Notch's board of directors.

Under the Notch Agreement, Notch will be eligible to receive up to $7.25 million upon achieving certain agreed research milestones, up to $4.0 million per exclusive target upon achieving certain pre-clinical development milestones, and up to $283.0 million per exclusive target and cell type (i.e., T cell or NK cell) upon achieving certain clinical, regulatory and commercial milestones. Notch is also entitled to receive tiered royalties in the mid to high single digit range on Allogene's sales of licensed products, subject to certain reductions, for a term, on a country-by-country and product-by-product basis, commencing on first commercial sale of such product in such country and continuing until the latest of (i) the date upon which there is no valid claim of the licensed patents in such country of sale that covers such product, (ii) the expiration of applicable data or other regulatory exclusivity in such country of sale or (iii) a defined period from the first commercial sale of such product in such country.

The terms of the Notch Agreement will continue on a product-by-product and country-by-country basis until Allogene's payment obligations with respect to such product in such country have expired. Following such expiration, Allogene's license with respect to such product and country shall be perpetual, irrevocable, fully paid up and royalty-free. Allogene may terminate the Collaboration Agreement in whole or on a product-by-product basis upon ninety days' prior written notice to Notch. Either party may also terminate the Collaboration Agreement with written notice upon material breach by the other party, if such breach has not been cured within a defined period of receiving such notice, or in the event of the other party's insolvency.

The Company has determined that Notch is a variable interest entity as of December 31, 2020 and 2019, respectively. The Company does not have the power to direct the activities which most significantly affect Notch's economic performance. Accordingly, for the years ended December 31, 2020 and 2019, the Company did not consolidate Notch because the Company determined that it was not the primary beneficiary.

For the years ended December 31, 2020 and 2019, the Company recorded $3.2 million and $0.1 million, respectively, in collaboration costs as research and development expenses.

Strategic Alliance with The University of Texas MD Anderson Cancer Center

On October 6, 2020, the Company entered into a strategic five-year collaboration agreement with The University of Texas MD Anderson Cancer Center (MD Anderson) for the preclinical and clinical investigation of allogeneic CAR T cell product candidates. The Company and MD Anderson are collaborating on the design and conduct of preclinical and clinical studies with oversight from a joint steering committee.

Under the terms of the agreement, the Company has committed up to $15.0 million of funding for the duration of the agreement. Payment of this funding is contingent on mutual agreement to study orders in order for any study to be included under the alliance. The Company made an upfront payment of $3.0 million to MD Anderson in the year ended December 31, 2020. The Company is obligated to make further payments to MD Anderson each year upon the anniversary of the agreement effective date through the duration of the agreement term. These costs are expensed to research and development as MD Anderson renders the services under the strategic alliance. As of December 31, 2020, no research and development costs had been incurred under the alliance.

The agreement may be terminated by either party for material breach by the other party. Individual studies may be terminated for, among other things, material breach, health and safety concerns or where the institutional review board, the review board at the clinical site with oversight of the clinical study, requests termination of any study. Where any legal or regulatory authorization is finally withdrawn or terminated, the relevant study will also terminate automatically.

Joint Venture and License Agreement with Allogene Overland Biopharm (CY) Limited

On December 14, 2020, the Company entered into a License Agreement with Allogene Overland Biopharm (CY) Limited (Allogene Overland), a joint venture established by the Company and Overland Pharmaceuticals (CY) Inc. (Overland), pursuant to a Share Purchase Agreement, dated December 14, 2020, for the purpose of developing, manufacturing and commercializing certain allogeneic CAR T cell therapies for patients in greater China, Taiwan, South Korea and Singapore (the JV Territory).

Pursuant to the Share Purchase Agreement, the Company acquired Seed Preferred Shares in Allogene Overland representing 49% of Allogene Overland's outstanding stock as partial consideration for the License Agreement, and Overland acquired Seed Preferred Shares representing 51% of Allogene Overland's outstanding stock for $117.0 million in upfront and certain quarterly cash payments, to support operations of Allogene Overland. As of December 31, 2020, the Company and Overland are the sole equity holders in Allogene Overland. The Company received $40 million from Allogene Overland as partial consideration for the License Agreement.

Pursuant to the License Agreement, the Company granted Allogene Overland an exclusive license to develop, manufacture and commercialize certain allogeneic CAR T cell candidates directed at four targets, BCMA, CD70, FLT3, and DLL3, in the JV Territory. As consideration, the Company would also be entitled to additional regulatory milestone payments of up to $40.0 million and, subject to certain conditions, tiered low-to-mid single-digit sales royalties.

Promises that the Company concluded were distinct performance obligations in the License Agreement included: (1) the license of intellectual property and delivery of know-how, (2) the manufacturing license, related know-how and support, (3) if and when available know-how developed in future periods, and (4) participation in the joint steering committee.

In order to determine the transaction price, the Company evaluated all the payments to be received during the duration of the contract. Fixed consideration exists in the form of the upfront payment. Regulatory milestones and royalties were considered variable consideration. The Company constrains the estimated variable consideration when it assesses it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. Milestone fees were constrained and not included in the transaction price due to the uncertainties of research and development. The Company re-evaluates the transaction price, including the estimated variable consideration included in the transaction price and all constrained amounts, in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The shares of Series Seed Preferred Stock were accounted for as part of the Company’s joint venture and equity method accounting upon formation of the joint venture, and as such, were excluded from the transaction price. The Company determined that the initial transaction price consists of the upfront payment of $40.0 million. The allocation of the transaction price is performed based on standalone selling prices, which are based on estimated amounts that the Company would charge for a performance obligation if it were sold separately. The transaction price allocated to the license of intellectual property and delivery of know-how will be recognized upon grant of license and delivery of know-how. The transaction price allocated to (i) the manufacturing license, related know-how and support services, (ii) if and when available know-how developed in future periods, and (iii) participation in the joint steering committee, will be recognized over time as the services are delivered. Funds received in advance are recorded as deferred revenue and will be recognized as the performance obligations are satisfied.

The Company has determined that Allogene Overland is a variable interest entity as of December 31, 2020. The Company does not have the power to independently direct the activities which most significantly affect Allogene Overland's economic performance. Accordingly, for the year ended December 31, 2020, the Company did not consolidate Allogene Overland because the Company determined that it was not the primary beneficiary.

For the year ended December 31, 2020, the Company recorded the $40.0 million upfront cash payment received from Allogene Overland as deferred revenue, of which $39.0 million was current, on the consolidated balance sheet.

Note 8. Commitments and Contingencies

Leases

In August 2018, the Company entered into an operating lease agreement for new office and laboratory space which consists of approximately 68,000 square feet located in South San Francisco, California. The lease term is 127 months beginning August 2018 through February 2029 with an option to extend the term for another seven years which is not reasonably assured of exercise. The Company has made certain tenant improvements, including the addition of laboratory space, and has received $5.0 million of tenant improvement allowances up to December 31, 2020. The rent payments began on March 1, 2019 after an abatement period.

In October 2018, the Company entered into an operating lease agreement for new office and laboratory space which consists of 14,943 square feet located in South San Francisco, California. The lease term is 124 months beginning November 2018 through February 2029, with an option to extend the term for another seven years which is not reasonably assured of exercise. The Company has made certain tenant improvements, including the upgrading of current office and laboratory space with a lease incentive allowance of $0.8 million. Rent payments began in November 2018.

In February 2019, the Company entered into a lease agreement for approximately 118,000 square feet of space to develop a cell therapy manufacturing facility in Newark, California. The lease term is 188 months beginning November 2020 through July 2036. Upon certain conditions, the Company has two ten-year options to extend the lease, both of which are not reasonably assured of exercise. The Company is entitled to a tenant improvement allowance of $2.9 million for costs related to the design and construction of certain Company improvements, and has received $1.6 million of tenant improvement allowances up to December 31, 2020.

The Company maintains letters of credit for the benefit of landlords which is disclosed as restricted cash in the consolidated balance sheet. Restricted cash related to letters of credit due to landlords was $5.2 million and $4.3 million as of December 31, 2020 and 2019, respectively.

The balance sheet classification of our lease liabilities were as follows (in thousands):

	December 31, 2020	December 31, 2019
Operating lease liabilities		
Current portion included in accrued and other current liabilities	$ 2,974	$ 1,679
Long-term portion of lease liabilities	50,809	51,349
Total operating lease liabilities	$ 53,783	$ 53,028

The components of lease costs for operating leases, which were recognized in operating expenses, were as follows (in thousands):

	Twelve Months Ended December 31,		
	2020	2019	2018
Operating lease cost	$ 7,390	$ 5,945	$ 1,863
Variable lease cost	1,382	1,087	32
Total lease costs	$ 8,771	$ 7,033	$ 1,895

Cash paid for amounts included in the measurement of lease liabilities for the twelve months ended December 31, 2020 was $6.2 million and was included in net cash used in operating activities in our consolidated statements of cash flows.

The undiscounted future non-cancellable lease payments under our operating leases as of December 31, 2020 is as follows:

Year ending December 31:	(in thousands)
2021	$ 6,485
2022	7,917
2023	8,168
2024	8,430
2025 and thereafter	56,654
Total undiscounted lease payments	87,653
Less: Present value adjustment	(32,313)
Less: Tenant improvement allowance	(1,557)
Total	$ 53,783

Operating lease liabilities are based on the net present value of the remaining lease payments over the remaining lease term. In determining the present value of lease payments, we use our estimated incremental borrowing rate. The weighted average discount rate used to determine the operating lease liability was 8.37%. As of December 31, 2020, the weighted average remaining lease term for our operating leases is 10.28 years.

Rent expense for short-term leases was $0.2 million, $2.4 million and $2.6 million for the years ended December 31, 2020, 2019 and 2018 respectively.

Certain lease agreements require the Company to return designated areas of leased space to its original condition upon termination of the lease agreement. At the inception of such leases, the Company records an asset retirement obligation and a corresponding capital asset in an amount equal to the estimated fair value of the obligation. To determine the fair value of the obligation, we estimate the cost for a third-party to perform the restoration work. In subsequent periods, for each asset retirement obligation, the Company records interest expense to accrete the asset retirement obligation liability to full value and depreciate each capitalized asset retirement obligation asset, both over the term of the associated lease agreement. Asset retirement obligations were $0.5 million and $0.4 million as of December 31, 2020 and 2019 respectively.

Other Commitments

Solar Power Purchase and Energy Services Agreement

In July 2020, the Company entered into a Solar Power Purchase and Energy Services Agreement for the installation and operation of a solar photovoltaic generating system and battery energy storage system at the Company's cell therapy manufacturing facility in Newark, California. The agreement has a term of 20 years and is expected to commence in the first half of 2021. The Company is obligated to pay for electricity generated from the system at an agreed rate for the duration of the agreement term. Termination of the agreement by the Company will result in a termination payment due of approximately $4.3 million. In connection with the agreement, the Company maintains a letter of credit for the benefit of the service provider in the amount of $4.3 million which is disclosed as restricted cash in the consolidated balance sheet as of December 31, 2020.

License Agreements for Intellectual Property

The Company has entered into certain license agreements for intellectual property which is used as part of our development and manufacturing processes. Each of these respective agreements are generally cancellable by the Company. These agreements require payment of annual license fees and may include conditional milestone payments for achievement of specific research, clinical and commercial events, and royalty payments. The timing and likelihood of any significant conditional milestone payments or royalty payments becoming due was not probable as of December 31, 2020.

Purchase Commitments

In the normal course of business, the Company enters into various purchase commitments with third-party contract manufacturers for the manufacture and processing of our product candidates and related raw materials, and we have entered into other contracts in the normal course of business with contract research organizations for clinical trials and other vendors for other services and products for operating purposes. These agreements generally provide for termination or cancellation, other than for costs already incurred. As of December 31, 2020, the Company had non-cancellable purchase commitments of $5.4 million.

Contingencies

In the normal course of business, the Company enters into contracts and agreements that contain a variety of representations and warranties and provide for general indemnifications. The Company’s exposure under these agreements is unknown, because it involves claims that may be made against the Company in the future, but have not yet been made. The Company accrues a liability for such matters when it is probable that future expenditures will be made and such expenditures can be reasonably estimated.

Indemnification

In accordance with the Company’s amended and restated certificate of incorporation and amended and restated bylaws, the Company has indemnification obligations to its officers and directors for certain events or occurrences, subject to certain limits, while they are serving in such capacity. There have been no claims to date, and the Company has a directors and officers liability insurance policy that may enable it to recover a portion of any amounts paid for future claims.

Note 9. Equity Method Investments

Notch Therapeutics

In conjunction with the execution of the Notch Agreement (see Note 7), the Company also entered into a Share Purchase Agreement with the Company acquiring shares of Notch's Series Seed convertible preferred stock for a total investment cost of $5.1 million which includes transaction costs of $0.1 million, resulting in a 25% ownership interest in Notch.

The Company's total equity investment in Notch as of December 31, 2020 and 2019 was $3.7 million and $4.9 million, respectively, based on the cost method of accounting. During the years ended December 31, 2020 and 2019, the Company recognized its share of Notch's net loss under the other expenses caption within the consolidated statement of operations.

Allogene Overland Biopharm (CY) Limited

In conjunction with the execution of the License Agreement with Allogene Overland (see Note 7), the Company also entered into a Share Purchase Agreement and Shareholders' Agreement with the joint venture company acquiring shares of Allogene Overland's Seed Preferred Shares representing a 49% ownership interest in exchange for entering into a License Agreement which had a carrying value of zero. The Company accounts for its investment in Allogene Overland as an equity method investment at carrying value. The Company's total equity investment is Allogene Overland was zero as of December 31, 2020.

The Company's equity investment in Allogene Overland as of December 31, 2020 had a zero carryover basis. Therefore, the Company did not account for its share of losses incurred by Allogene Overland. See Note 7 for further details.

Note 10. Convertible Notes Payable (2018 Notes)

In September 2018, the Company entered into a note purchase agreement pursuant to which it sold and issued an aggregate of $120.2 million in convertible promissory notes (convertible notes payable or 2018 Notes) and received net cash proceeds of $116.8 million. On issuance, the fair value of the 2018 Notes was determined to be equal to $120.2 million, which is the principal amount of the 2018 Notes.

The 2018 Notes did not accrue interest. The 2018 Notes were settled in 7,856,176 shares of common stock in connection with the closing of the Company's IPO (see Note 1) at a settlement price equal to 85% of the IPO price per share.

On issuance, the Company elected to account for the 2018 Notes at fair value with any changes in estimated fair value being recognized through the statements of operations and comprehensive loss until the 2018 Notes settled. The fair value of the 2018 Notes was determined to be $141.4 million upon settlement. For the years ended December 31, 2020 and 2019, the Company recognized zero and $21.2 million, respectively, of expense in the accompanying statements of operations and comprehensive loss for the change in fair value of the 2018 Notes. On issuance, total debt issuance costs of $3.4 million were expensed and recognized as interest expense in the accompanying statements of operations and comprehensive loss.

Note 11. Convertible Preferred Stock and Stockholders' Equity

Convertible Preferred Stock

As discussed in Note 6, the Company issued 3,187,772 shares of its Series A-1 convertible preferred stock to Pfizer in connection with the Pfizer Agreement entered into in April 2018.

In April 2018, the Company issued 7,557,990 shares of its Series A convertible preferred stock at a price per share of $35.06 for net cash proceeds of $264.4 million and issued 998,225 shares of Series A-1 convertible preferred stock at a price per share of $35.06 for net cash proceeds of $34.9 million. Fifty percent of the aggregate purchase price of $300.0 million was paid in April 2018. The remaining subscriptions receivable of $150.0 million was received in July and August 2018, at the election of the Company's board of directors.

On the completion of the IPO (see Note 1), all outstanding shares of convertible preferred stock were automatically converted into 61,655,922 shares of common stock.

Preferred Stock

Pursuant to the Amended and Restated Certificate of Incorporation filed on October 15, 2018, as amended, the Company is authorized to issue a total of 10,000,000 shares of preferred stock, of which no shares were issued and outstanding at December 31, 2020 and 2019.

Common Stock

Pursuant to the Amended and Restated Certificate of Incorporation filed on October 15, 2018, as amended, the Company is authorized to issue a total of 200,000,000 shares of common stock, of which 140,474,305 and 124,267,358 shares were issued and outstanding at December 31, 2020 and 2019, respectively.

In connection with the issuance of the Company's Series A convertible preferred stock in April 2018, the Company's founders agreed to modify their common shares outstanding to include vesting provisions that require continued service to the Company in order to vest in those shares. As such, the 26,249,993 modified shares of common stock became compensatory upon such modification. The total compensation cost resulting from the modification is approximately $59.5 million and is being recognized over the four year vesting term.

Common stockholders are entitled to dividends if and when declared by the Company's Board of Directors subject to the prior rights of the preferred stockholders. As of December 31, 2020 and 2019, no dividends on common stock had been declared by the Company's Board of Directors.

Note 12. Stock-Based Compensation

2018 Equity Incentive Plan

In June 2018, the Company adopted its 2018 Equity Incentive Plan (Prior 2018 Plan). The 2018 Plan provided for the Company to sell or issue common stock or restricted common stock, or to grant incentive stock options or nonqualified stock options for the purchase of common stock, to employees, members of the Company's Board of Directors and consultants of the Company under terms and provisions established by the Company's Board of Directors. In September 2018, the Board of Directors adopted a new amended and restated 2018 Equity Incentive Plan as a successor to and continuation of the Prior 2018 Plan, which became effective in October 2018 (the 2018 Plan), which authorized additional shares for issuance and provided for an automatic annual increase to the number of shares issuable under the 2018 Plan by an amount equal to 5% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year. The term of any stock option granted under the 2018 Plan cannot exceed 10 years. The Company generally grants stock-based awards with service conditions only. Options granted typically vest over a four-year period but may be granted with different vesting terms. Restricted Stock Units granted typically vest annually over a four-year period but may be granted with different vesting terms. Options shall not have an exercise price less than 100% of the fair market value of the Company's common stock on the grant date. If the individual possesses more than 10% of the combined voting power of all classes of stock of the Company, the exercise price shall not be less than 110% of the fair market value of a common share of stock on the date of grant. This requirement is applicable to incentive stock options only.

As of December 31, 2020 and 2019, there were 12,308,848 and 9,642,503 shares reserved by the Company under the 2018 Plan for the future issuance of equity awards.

Stock Option Activity

The following summarizes option activity under the 2018 Plan:

	Outstanding Options			
	Number of Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contract Term	Aggregate Intrinsic Value
			(in years)	(in thousands)
Balance, December 31, 2019	9,190,522	$ 14.51	8.82	$ 110,490
Options granted	3,252,687	21.86		
Options exercised	(1,260,275)	7.05		$ 36,264
Options forfeited	(748,900)	13.99		
Balance, December 31, 2020	10,434,034	$ 17.73	8.29	$ 93,149
Exercisable, December 31, 2020	6,473,752	$ 15.77	8.17	$ 65,818
Vested and expected to vest, December 31, 2020	10,434,034	$ 17.73	8.29	$ 93,149

The aggregate intrinsic values of options exercised, outstanding, exercisable, vested and expected to vest were calculated as the difference between the exercise price of the options and the closing price of the Company's common stock on the Nasdaq Global Select Market on December 31, 2020. During the years ended December 31, 2020 and 2019, the estimated weighted-average grant-date fair value of employee options granted was $13.79 per share and $18.42 per share, respectively. As of December 31, 2020 and 2019, there was $81.1 million and $74.7 million, respectively, of unrecognized stock-based compensation related to unvested stock options, which is expected to be recognized over a weighted-average period of 2 years, 222 days and 3 years, 15 days, respectively.

The fair value of employee, consultant and director stock option awards was estimated at the date of grant using a Black-Scholes option-pricing model with the following assumptions:

	Year Ended December 31,	
	2020	**2019**
Fair value of common stock	$18.22 - $48.94	$25.94 - $31.99
Expected term in years	5.31 - 6.09	5.27 - 6.08
Expected volatility	71.42% - 72.14%	74.14% - 74.92%
Expected risk-free interest rate	0.31% - 1.65%	1.54% - 2.62%
Expected dividend	0%	0%

The Black-Scholes option-pricing model requires the use of subjective assumptions which determine the fair value of stock-based awards. These assumptions include:

Fair value of common stock—For grants before October 2018 when the Company was private and there was no public market for the Company's common stock, the fair value of the Company's common stock underlying share-based awards was estimated on each grant date by the Company's Board of Directors. In order to determine the fair value of the Company's common stock underlying option grants, the Company's Board of Directors considered, among other things, valuations of the Company's common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provided by the American Institute of Certified Public Accountants Practice Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. For all grants subsequent to the Company's IPO in October 2018, the fair value of common stock was determined by taking the closing price per share of common stock per Nasdaq.

Expected term— The expected term represents the period that stock-based awards are expected to be outstanding. The expected term for option grants is determined using the simplified method. The simplified method deems the term to be the average of the time-to-vesting and the contractual life of the stock-based awards.

Expected volatility— The Company uses an average historical stock price volatility of comparable public companies within the biotechnology and pharmaceutical industry that were deemed to be representative of future stock price trends as the Company does not have sufficient trading history for its common stock. The Company will continue to apply this process until a sufficient amount of historical information regarding the volatility of its own stock price becomes available.

Risk-free interest rate—The risk-free interest rate is based on the U.S. Treasury zero coupon issues in effect at the time of grant for periods corresponding with the expected term of option.

Expected dividend—The Company has never paid dividends on its common stock and has no plans to pay dividends on its common stock. Therefore, the Company used an expected dividend yield of zero.

For the years ended December 31, 2020 and 2019, total stock-based compensation expense related to stock options was $31.8 million and $21.9 million, respectively.

Restricted Stock Unit Activity

The following summarizes restricted stock unit activity under the 2018 Plan:

	Outstanding Restricted Stock Units			
	Restricted Stock Units	Weighted- Average Grant Date Fair Value per Share	Weighted Average Remaining Vesting Life	Aggregate Intrinsic Value
			(in years)	(in thousands)
Unvested December 31, 2019	1,941,155	$ 27.45	1.98	50,431
Granted	1,269,499	24.40	1.68	
Vested	(490,470)	27.41		
Forfeited	(226,264)	24.87		
Unvested December 31, 2020	2,493,920	$ 26.14	1.66	$ 62,947
Vested and expected to vest, December 31, 2020	2,493,920	$ 26.14	1.66	$ 62,947

For the years ended December 31, 2020 and 2019, the Company granted zero and 57,361 performance based restricted stock units to a certain executive officer pursuant to the 2018 Plan. The 2019 granted performance awards are subject to the holder's continued service to the Company through each applicable vesting event. Through December 31, 2020, the Company believes that the achievement of the requisite performance conditions for these awards are not probable and as a result, no compensation expense has been recognized related to these awards in the year ended December 31, 2020.

For the years ended December 31, 2020 and 2019, total stock-based compensation expense related to restricted stock units was $17.2 million and $8.8 million, respectively. As of December 31, 2020 and 2019, there was $51.1 million and $43.0 million, respectively, of unrecognized stock-based compensation which is expected to be recognized over a weighted average period of 2.84 years.

Employee Stock Purchase Plan

In October 2018, the shareholders approved the 2018 Employee Stock Purchase Plan (ESPP), which initially reserved 1,160,000 shares of our common stock for employee purchases under terms and provisions established by the Board of Directors. Effective January 1, 2020 and 2019, the number of shares authorized under the ESPP for employee purchases increased by 1,242,673 and 1,214,826 shares respectively. The ESPP is intended to qualify as an ‘employee stock purchase plan’ under Section 423 of the Internal Revenue Code. Under the current offering adopted pursuant to the ESPP, each offering period is approximately 24 months, which is generally divided into four purchase periods of approximately six months.

Employees are eligible to participate if they are employed by the Company. Under the ESPP, employees may purchase common stock through payroll deductions at a price equal to 85% of the lower of the fair market value of common stock on the first trading day of each offering period or on the purchase date. The ESPP provides for consecutive, overlapping 24-month offering periods. The offering periods are scheduled to start on the first trading day on or after March 16 or September 16 of each year, except for the first offering period which commenced on October 11, 2018, the first trading day after the effective date of the Company’s registration statement. Contributions under the ESPP are limited to a maximum of 15% of an employee’s eligible compensation.

The fair values of the rights granted under the ESPP were calculated using the following assumptions:

	Year ended December 31,	
	2020	2019
Expected term (in years)	0.50 – 2.00	0.50 – 2.00
Volatility	63.88% - 72.75%	60.4% - 76.0%
Risk-free interest rate	0.12%-0.36%	1.72% - 2.49%
Dividend yield	—	—

For the years ended December 31, 2020 and 2019, total stock-based compensation expense related to ESPP was $2.5 million and $1.6 million, respectively.

Founders’ Stock

Stock-based compensation expense is recognized for shares of founders' stock as vesting conditions are met. In relation to the modification described in Note 11, 24,230,750 shares of founders' stock remained unvested at the modification date in April 2018. For the years ended December 31, 2020 and 2019, $13.7 million and $13.7 million of stock-based compensation expense was recognized related to the vesting of 6,057,684 and 6,057,684 shares, respectively, of founders' stock. At December 31, 2020 and 2019, there was $17.1 million and $30.9 million of unrecognized stock-based compensation expense related to 7,572,119 and 13,629,803 shares of unvested founders' stock which is expected to be recognized over 1 year, 3 months and 2 years, 3 months, respectively. The weighted-average fair value at grant date for founders' stock was $2.27 per share.

Total stock-based compensation expense related to stock options, restricted stock units, employee stock purchase plans and vesting of the founders' common stock was as follows:

	Year Ended December 31,		
	2020	2019	2018
	(in thousands)		
Research and development	$ 31,309	$ 19,429	$ 1,657
General and administrative	33,952	26,634	16,909
Total stock-based compensation expense	$ 65,261	$ 46,063	$ 18,566

Early Exercised Options

The Company allows certain of its employees and its directors to exercise options granted under the Prior 2018 Plan and the 2018 Plan prior to vesting. The shares related to early exercised stock options are subject to the Company's lapsing repurchase right upon termination of employment or service on the Company's Board of Directors at the lesser of the original purchase price or fair market value at the time of repurchase. In order to vest, the holders are required to provide continued service to the Company. The proceeds are initially recorded in accrued and other liabilities and other long-term liabilities for the noncurrent portion. The proceeds are reclassified to paid-in capital as the repurchase right lapses. During the years ended December 31, 2020 and 2019, zero options were early exercised. As of December 31, 2020 and 2019, there was $2.8 million and $2.8 million recorded in accrued and other liabilities and $1.1 million and $3.9 million recorded in other long-term liabilities related to shares held by employees and directors that were subject to repurchase. The underlying shares are shown as outstanding in the consolidated financial statements since the exercise date but the shares which are subject to future vesting conditions are not included in the calculation of earnings per share.

Note 13. Related Party Transactions

Pfizer Inc.

As of December 31, 2020 and 2019, Pfizer held 22,032,040 shares of Common Stock and had appointed one member to the Company's Board of Directors.

In April 2018, the Company and Pfizer entered into a transition services agreement (the Pfizer TSA) for Pfizer to provide professional services to the Company related to research and development, project management, and other administrative functions. In September 2019, the Company and Pfizer terminated the Pfizer TSA. For the years ended December 31, 2020, 2019 and 2018, the costs incurred under the Pfizer TSA were zero, $4.5 million and $10.1 million, respectively.

The Company also purchased certain lab supplies and services from Pfizer in connection with its research and development activities. For the years ended December 31, 2020, 2019 and 2018, total lab supplies and services purchased from Pfizer were zero, $1.4 million and $10.4 million, respectively.

As of December 31, 2020 and 2019, the Company had amounts payable to Pfizer of zero and $0.1 million, respectively, which were recorded in the accompanying consolidated balance sheets.

Consulting Agreements

In June 2018, the Company entered into a services agreement with Two River Consulting LLC (Two River) a firm affiliated with the Company's President and Chief Executive Officer, the Company's Executive Chairman of the board of directors, and a director of the Company to provide various managerial, administrative, accounting and financial services to the

Company. The costs incurred for services provided under this agreement were $0.4 million, $0.6 million and $0.6 million for the years ended December 31, 2020, 2019 and 2018, respectively.

In August 2018, the Company entered into a consulting agreement with Bellco Capital LLC (Bellco). Pursuant to the consulting agreement, Bellco provides certain services for the Company, which are performed by Dr. Belldegrun and include without limitation, providing advice and analysis with respect to the Company's business, business strategy and potential opportunities in the field of allogeneic CAR T cell therapy and any other aspect of the CAR T cell therapy business as the Company may agree. In consideration for these services, the Company paid Bellco $33,333 per month in arrears commencing January 2019 and $37,000 per month in arrears commencing January 2020. The Company may also, at its discretion, pay Bellco an annual performance award in an amount up to 60% of the aggregate compensation payable to Bellco in a calendar year. The Company also reimburses Bellco for out of pocket expenses incurred in performing the services. The costs incurred for services provided, bonus and out-of-pocket expenses incurred under this consulting agreement were $0.9 million, $0.8 million and $0.5 million for the years ended December 31, 2020, 2019 and 2018, respectively.

As of December 31, 2020 and 2019, amounts due to Bellco of $0.3 million and $0.3 million, respectively, were recorded in accrued and other current liabilities in the accompanying consolidated balance sheets.

Sublease Agreements

In December 2018, the Company entered into a sublease with Bellco for 1,293 square feet of office space in Los Angeles, California for a three year term. On April 1, 2020, Bellco Capital Advisors Inc. assumed all rights, title, interests and obligations under the sublease from Bellco Capital LLC. The Company's executive chairman, Arie Belldegrun, M.D., FACS, is a trustee of the Belldegrun Family Trust, which controls Bellco Capital Advisors Inc. The total right of use asset and associated liability recorded related to this related party lease was $0.1 million and $0.1 million at December 31, 2020 and 2019, respectively.

In February 2019, the Company subleased 2,180 square feet of its office space in New York, New York, to ByHeart, Inc., formerly known as Second Science, Inc. (ByHeart). ByHeart is a development-stage infant formula company. Certain of the Company's board members and executive officers have beneficial ownership in ByHeart and two serve on the board of directors of ByHeart. In September 2019, the Company entered into an amendment to the sublease agreement and increased the subleased space to 2,907 square feet. In October 2020, the sublease agreement between the Company and ByHeart was terminated. Sublease income for the years ended December 31, 2020 and 2019 was $0.3 million and $0.3 million, respectively, and was recognized as other income.

Allogene Overland Biopharm (CY) Limited

On December 14, 2020, the Company entered into an agreement with Overland to create a joint venture for the purpose of developing, manufacturing and commercializing certain allogeneic CAR T cell therapies for patients in greater China, Taiwan, South Korea and Singapore. In December 2020, the joint venture company, Allogene Overland, was established and obtained its business license in the Cayman Islands. Upon consummation of the joint venture, the Company and Overland received a 49% and 51% equity interest, respectively, in the entity in exchange for their contributions to the entity. See Notes 7 and 9 for further discussion.

Note 14. 401(k) Plan

In April 2018, the Company began to sponsor a 401(k) retirement savings plan for the benefit of its employees. All employees are eligible to participate, provided they meet the requirements of the plan. The Company made contributions to the plan for eligible participants, and recorded contribution expenses of $1.4 million, $0.9 million and $0.4 million related to matched contributions for the years ended December 31, 2020, 2019 and 2018, respectively.

Note 15. Income Taxes

For the years ended December 31, 2020, 2019 and 2018, the Company recorded income tax related to minimum state taxes. The Company has incurred net operating losses for all the periods presented. The Company has not reflected any benefit of such net operating loss carryforwards in the accompanying consolidated financial statements.

The Company has established a full valuation allowance against its deferred tax assets due to the uncertainty surrounding the realization of such assets.

	Year Ended December 31,		
	2020	2019	2018
Current:		(in thousands)	
Federal	$ —	$ —	$ —
State	—	1	2
	—	1	2
Deferred:			
Federal	—	(251)	(89)
State	—	(81)	(30)
	—	(332)	(119)
Benefit for income taxes	$ —	$ (331)	$ (117)

Reconciliation of the benefit for income taxes calculated at the statutory rate to our benefit for income taxes is as follows:

	Year Ended December 31,		
	2020	2019	2018
		(in thousands)	
Tax benefit at federal statutory rate	$ (52,546)	$ (38,834)	$ (44,441)
State taxes, net of federal benefit	(18,656)	(12,951)	(10,652)
Stock-based compensation	997	2,037	3,629
Research tax credits	(2,319)	(1,714)	(708)
Write-off of in-process R&D	—	—	5,247
Change in fair value of convertible notes	—	—	4,454
Change in valuation allowance	72,538	49,989	41,916
Other	(14)	1,142	438
Benefit for incomes taxes	$ —	$ (331)	$ (117)

Deferred income taxes reflect the net tax effects of (a) temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, and (b) operating losses and tax credit carryforwards.

Significant components of our deferred tax assets and liabilities are as follows:

	Year Ended December 31,		
	2020	2019	2018
	(in thousands)		
Deferred tax assets:			
Net operating loss carryforwards	$ 115,199	$ 54,018	$ 16,437
Tax credit carryforwards	8,297	4,239	1,239
Intangibles	20,582	22,770	23,086
Accrued expenses	3,888	2,375	952
Lease liabilities	15,050	14,839	9,730
Stock based compensation	12,970	6,870	360
Investments	175	—	—
Other	12	—	—
Total deferred tax assets	176,173	105,111	51,804
Deferred tax liabilities:			
Fixed assets	(172)	(361)	(531)
Right of use leased assets	(11,556)	(12,453)	(9,239)
Investments	—	(393)	(118)
Other	—	—	—
Total deferred tax liabilities	(11,728)	(13,207)	(9,888)
Net deferred tax assets	164,445	91,904	41,916
Valuation allowance	(164,445)	(91,904)	(41,916)
Net deferred tax assets	$ —	$ —	$ —

Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Due to the lack of earnings history, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by approximately $72.5 million, $50.0 million and $41.9 million during the years ended December 31, 2020, 2019 and 2018, respectively.

The following table sets forth our federal and state NOL carryforwards and federal research and development tax credits as of December 31, 2020:

	Amount	Expiration
	(in thousands)	
Net operating losses, federal	$ 413,920	Indefinite
Net operating losses, federal	$ 2	2037
Net operating losses, state	$ 404,881	2037-2039
Tax credits, federal	$ 7,902	2037-2039
Tax credits, state	$ 7,502	Indefinite

Current federal and California tax laws include substantial restrictions on the utilization of NOLs and tax credit carryforwards in the event of an ownership change of a corporation. Accordingly, the Company's ability to utilize NOLs and tax credit carryforwards may be limited as a result of such ownership changes. Such a limitation could result in the expiration of carryforwards before they are utilized.

In December 2019, the FASB issued Accounting Standards Update No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes (ASU 2019-12), which simplifies the accounting for income taxes, eliminates certain exceptions within ASC 740, Income Taxes, and clarifies certain aspects of the current guidance to promote consistency among reporting entities. This guidance will be effective for the Company in the first quarter of 2021 on a prospective basis, and early adoption is permitted. The Company early adopted this standard as of January 1, 2020 on a prospective basis in accordance with ASC 250, Accounting Changes and Error Corrections. The adoption resulted in the Company no longer needing to determine the tax effect from unrealized gains on available for sale securities, which previously had been disclosed in the consolidated statement of operations as a benefit from income taxes. The impact of the adoption is that the benefit from income taxes in the consolidated statement of operations and comprehensive loss is zero. For the years ended December 31,

2019 and 2018, the Company recorded a tax benefit of $0.3 million and $0.1 million respectively, in other comprehensive income, related to available-for-sale securities.

We apply the provisions of ASC Topic 740 to account for uncertain income tax positions. A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	December 31,		
	2020	2019	2018
		(in thousands)	
Balance at beginning of the year:	3,148	920	—
Additions based on tax positions related to current year	3,013	2,228	920
Additions to tax position of prior year	—	—	—
Reductions to tax position of prior years	—	—	—
Lapse of the applicable statute of limitations	—	—	—
Balance at end of the year	$ 6,161	$ 3,148	$ 920

It is the Company's policy to include penalties and interest expense related to income taxes as a component of interest and other income, net, as necessary. As of December 31, 2020, 2019 and 2018, there were no accrued interest and penalties related to uncertain tax positions. The reversal of the uncertain tax benefits would not affect the effective tax rate to the extent that the Company continues to maintain a full valuation allowance against its deferred tax assets. Unrecognized tax benefits may change during the next 12 months for items that arise in the ordinary course of business. We are subject to examination by U.S. federal or state tax authorities for all years since inception.

Note 16. Net Loss and Net Loss Per Share

The following table sets forth the computation of the basic and diluted net loss per share (in thousands, except share and per share data):

	Year Ended December 31,		
	2020	2019	2018
Numerator:			
Net loss	$ (250,221)	$ (184,594)	$ (211,505)
Denominator:			
Weighted average common shares outstanding	120,370,177	101,061,149	28,948,386
Net loss per share, basic and diluted	$ (2.08)	$ (1.83)	$ (7.31)

Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share as the inclusion of all potential dilutive securities would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	Year Ended December 31,		
	2020	2019	2018
Stock options to purchase common stock	10,434,034	9,190,522	7,235,545
Restricted stock units subject to vesting	2,493,920	1,941,155	—
Expected shares purchased under Employee Stock Purchase Plan	312,750	195,161	144,272
Founder shares subject to future vesting	7,572,119	13,629,803	19,687,487
Early exercised stock options subject to future vesting	1,737,137	2,992,290	5,020,580
Total	22,549,960	27,948,931	32,087,884

Note 17. Subsequent Events

In February 2021, the Company made a $15.9 million investment in Notch's Series A preferred stock. Immediately following this transaction, the Company's share in Notch was 17% on a fully diluted basis.

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

None.

Item 9A. Controls and Procedures.

Conclusions Regarding the Effectiveness of Disclosure Controls and Procedures

As of December 31, 2020, management, with the participation of our Chief Executive Officer and Chief Financial Officer, performed an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including the Chief Executive Officer and the Chief Financial Officer, to allow timely decisions regarding required disclosures.

Any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objective and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2020, the design and operation of our disclosure controls and procedures were effective at a reasonable assurance level.

Management's Annual Report on Internal Controls Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management has assessed the effectiveness of our internal control over financial reporting based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013 framework). Based on our evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2020.

The effectiveness of our internal control over financial reporting has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their attestation report herein, which expresses an unqualified opinion on the effectiveness of our internal control over financial reporting as of December 31, 2020.

Inherent Limitations of Internal Controls

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Changes in Internal Control over Financial Reporting

We regularly review our system of internal control over financial reporting and make changes to our processes and systems to improve controls and increase efficiency, while ensuring that we maintain an effective internal control environment. Changes may include such activities as implementing new, more efficient systems, consolidating activities, and migrating processes. There were no changes in our internal control over financial reporting that occurred during the most recently completed fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Allogene Therapeutic, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Allogene Therapeutic, Inc.'s internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Allogene Therapeutic, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the 2020 consolidated financial statements of the Company and our report dated February 25, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

San Jose, California
February 25, 2021

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item and not set forth below will be set forth in the section headed "—Election of Directors" and "Information Regarding the Board of Directors and Corporate Governance" in our definitive Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC by April 30, 2021 (our Proxy Statement) and is incorporated in this Annual Report by reference.

We have adopted a code of ethics for directors, officers (including our principal executive officer, principal financial officer and principal accounting officer) and employees, known as the Code of Business Conduct and Ethics. The Code of Business Conduct and Ethics is available on our website at *http://www.allogene.com* under the Governance section of our Investors page. We will promptly disclose on our website (i) the nature of any amendment to the policy that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and (ii) the nature of any waiver, including an implicit waiver, from a provision of the policy that is granted to one of these specified individuals, the name of such person who is granted the waiver and the date of the waiver. Shareholders may request a free copy of the Code of Business Conduct and Ethics from our Compliance Officer, c/o Allogene Therapeutics, Inc., 210 E. Grand Ave, South San Francisco, CA 94080.

Item 11. Executive Compensation.

The information required by this Item will be set forth in the section headed "Executive Compensation" in our Proxy Statement and is incorporated in this Annual Report by reference.

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

The information required by this Item will be set forth in the section headed "Security Ownership of Certain Beneficial Owners and Management" in our Proxy Statement and is incorporated in this Annual Report by reference.

Information regarding our equity compensation plans will be set forth in the section headed "Executive Compensation" in our Proxy Statement and is incorporated in this Annual Report by reference.

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

The information required by this Item will be set forth in the section headed "Transactions With Related Persons" in our Proxy Statement and is incorporated in this Annual Report by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this Item will be set forth in the section headed "—Ratification of Selection of Independent Registered Public Accounting Firm" in our Proxy Statement and is incorporated in this Annual Report by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a)(1) Financial Statements.

The response to this portion of Item 15 is set forth under Part II, Item 8 above.

(a)(2) Financial Statement Schedules.

All schedules have been omitted because they are not required or because the required information is given in the Financial Statements or Notes thereto set forth under Item 8 above.

(a)(3) Exhibits.

The exhibits listed in the Exhibit Index below are filed or incorporated by reference as part of this Annual Report.

Exhibit Index

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K (File No. 001-38693), filed with the SEC on October 15, 2018).
3.2	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K (File No. 001-38693), filed with the SEC on October 15, 2018).
4.1	Reference is made to Exhibits 3.1 and 3.2
4.2	Form of Common Stock Certificate of the Registrant (incorporated by reference to Exhibit 4.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on October 2, 2018.
4.3	Description of Common Stock (incorporated by reference to Exhibit 4.3 to the Registrant's Annual Report on Form 10-K, as amended (File No. 001-38693), filed with the SEC on February 27, 2020).
4.4	Investors' Rights Agreement, dated April 6, 2018, by and among the Registrant and certain of its securityholders, as amended September 5, 2018, (incorporated by reference to Exhibit 4.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on September 14, 2018)
10.1+	Form of Indemnity Agreement by and between the Registrant and its directors and officers (incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on October 2, 2018).
10.2+	Indemnification Agreement, dated April 6, 2018, by and between the Registrant and John DeYoung (incorporated by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on October 2, 2018).
10.3+	Allogene Therapeutics, Inc. Amended and Restated 2018 Equity Incentive Plan (Prior Plan) and Forms of Stock Option Grant Notice, Option Agreement, Notice of Exercise and Early Exercise Stock Purchase Agreement thereunder, as amended (incorporated by reference to Exhibit 10.2 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on September 14, 2018).
10.4+	Allogene Therapeutics, Inc. Amended and Restated 2018 Equity Incentive Plan and Forms of Stock Option Grant Notice, Option Agreement, Notice of Exercise, Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement thereunder (incorporated by reference to Exhibit 99.2 to the Registrant's Registration Statement on Form S-8 (File No. 333-227965), filed with the SEC on October 24, 2018).
10.5+	Allogene Therapeutics, Inc. 2018 Employee Stock Purchase Plan (incorporated by reference to Exhibit 99.3 to the Registrant's Registration Statement on Form S-8 (File No. 333-227965), filed with the SEC on October 24, 2018).
10.6+	Allogene Therapeutics, Inc. 2018 Change in Control Plan and Severance Benefit Plan (incorporated by reference to Exhibit 10.6 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on October 2, 2018).
10.7+	Non-Employee Director Compensation Policy.
10.8+	Employment Agreement by and between the Registrant and David Chang, M.D., Ph.D. (incorporated by reference to Exhibit 10.12 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on September 14, 2018).

10.9+	Employment Agreement by and between the Registrant and Eric Schmidt, Ph.D. (incorporated by reference to Exhibit 10.13 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on September 14, 2018).
10.10+	Employment Agreement by and between the Registrant and Alison Moore, Ph.D. (incorporated by reference to Exhibit 10.14 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on September 14, 2018).
10.11+	Employment Letter of Agreement, dated July 29, 2019, by and between the Registrant and Rafael G. Amado, M.D. (incorporated by reference to Exhibit 10.11 to the Registrant's Annual Report on Form 10-K, as amended (File No. 001-38693), filed with the SEC on February 27, 2020).
10.12+	Employment Letter of Agreement, dated April 30, 2018, by and between the Registrant and Veer Bhavnagri (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38693), filed with the SEC on May 6, 2020).
10.13*	License Agreement, dated March 8, 2019, between the Registrant and Cellectis S.A. (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38693), filed with the SEC on May 7, 2019).
10.14†	Exclusive License and Collaboration Agreement, dated October 30, 2015, by and between the Registrant (assignee of Pfizer Inc.) and Les Laboratoires Servier and Institut de Recherches Internationales Servier (incorporated by reference to Exhibit 10.7 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on September 17, 2018).
10.15†	Asset Contribution Agreement, dated April 2, 2018, by and between the Registrant and Pfizer Inc. (incorporated by reference to Exhibit 10.8 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), filed with the SEC on September 14, 2018).
10.16*	Collaboration and License Agreement, dated November 1, 2019, by and between the Registrant and Notch Therapeutics Inc. (incorporated by reference to Exhibit 10.15 to the Registrant's Annual Report on Form 10-K, as amended (File No. 001-38693), filed with the SEC on February 27, 2020).
10.17	Lease, dated August 1, 2018, by and between the Registrant and Britannia Pointe Grand Limited Partnership. (incorporated by reference to Exhibit 10.11 to the Registrant's Registration Statement on Form S-1, as amended (File No. 333-227333), originally filed with the SEC on September 14, 2018).
10.18	Lease Agreement, dated October 25, 2018, by and between the Registrant and HCP, Inc. (incorporated by reference to Exhibit 10.18 to the Registrant's Annual Report on Form 10-K (File No. 001-38693), filed with the SEC on March 8, 2019).
10.19	Lease Agreement, dated February 19, 2019, by and between the Registrant and Silicon Valley Gateway Technology Center, LLC (incorporated by reference to Exhibit 10.18 to the Registrant's Annual Report on Form 10-K (File No. 001-38693), filed with the SEC on March 8, 2019).
10.20	First Amendment, dated September 4, 2019, to the Lease Agreement, dated February 19, 2019, by and between the Registrant and Silicon Valley Gateway Technology Center, LLC (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38693), filed with the SEC on November 5, 2019).
10.21	Second Amendment, dated July 15, 2020, to the Lease Agreement, dated February 19, 2019, by and between the Registrant and Silicon Valley Gateway Technology Center, LLC (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-38693) for the quarter ended June 30, 2020, filed with the SEC on August 5, 2020).
10.22	Sales Agreement, dated November 5, 2019, by and between the Registrant and Cowen and Company, LLC (incorporated by reference to Exhibit 1.2 to the Registrant's Registration Statement on Form S-3 (File No. 333-234516), filed with the SEC on November 5, 2019).
10.23*¥	Exclusive License Agreement, dated December 14, 2020, by and between the Registrant and Allogene Overland Biopharm (CY) Limited.
10.24*¥	Share Purchase Agreement, dated December 14, 2020, by and among the Registrant, Overland Pharmaceuticals (CY) Inc. and Allogene Overland Biopharm (CY) Limited.
10.25*	Shareholders' Agreement, dated December 14, 2020, by and among the Registrant, Overland Pharmaceuticals (CY) Inc. and Allogene Overland Biopharm (CY) Limited.
23.1	Consent of Independent Registered Public Accounting Firm.
24.1	Power of Attorney. Reference is made to the signature page hereto.
31.1	Certification of Principal Executive Officer 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.

31.2	Certification of Principal Financial Officer 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.
32.1	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	The cover page of the Company's Annual Report on Form 10-K has been formatted in Inline XBRL.

+ Indicates management contract or compensatory plan.

† Confidential treatment has been granted with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission

* Certain portions of this exhibit (indicated by "[***]") have been omitted as the Registrant has determined (i) the omitted information is not material and (ii) the omitted information would likely cause harm to the Registrant if publicly disclosed.

¥ Schedules have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Registrant undertakes to furnish supplemental copies of any of the omitted schedules to the SEC upon request.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized, in South San Francisco, California, on February 25, 2021.

Allogene Therapeutics, Inc.

By: /s/ David Chang, M.D., Ph.D.
David Chang, M.D., Ph.D.
President, Chief Executive Officer and Member of the Board of Directors
(*Principal Executive Officer*)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints David Chang, M.D., Ph.D. and Eric Schmidt, Ph.D., and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, 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.

Signature	Title	Date
/s/ David Chang, M.D., Ph.D. David Chang, M.D., Ph.D.	President, Chief Executive Officer and Member of the Board of Directors (*Principal Executive Officer*)	February 25, 2021
/s/ Eric Schmidt, Ph.D. Eric Schmidt, Ph.D.	Chief Financial Officer (*Principal Financial and Accounting Officer*)	February 25, 2021
/s/ Arie Belldegrun, M.D., FACS Arie Belldegrun, M.D., FACS	Executive Chairman of the Board of Directors	February 25, 2021
/s/ David Bonderman David Bonderman	Member of the Board of Directors	February 25, 2021
/s/ John DeYoung John DeYoung	Member of the Board of Directors	February 25, 2021
/s/ Franz Humer, Ph.D. Franz Humer, Ph.D.	Member of the Board of Directors	February 25, 2021
/s/ Joshua Kazam Joshua Kazam	Member of the Board of Directors	February 25, 2021
/s/ Deborah M. Messemer Deborah M. Messemer	Member of the Board of Directors	February 25, 2021
/s/ Todd Sisitsky Todd Sisitsky	Member of the Board of Directors	February 25, 2021
/s/ Owen Witte, M.D. Owen Witte, M.D.	Member of the Board of Directors	February 25, 2021

Exhibit 10.7

ALLOGENE THERAPEUTICS, INC.
NON-EMPLOYEE DIRECTOR COMPENSATION POLICY ADOPTED: SEPTEMBER 26, 2018
AMENDED: APRIL 16, 2019
AMENDED: SEPTEMBER 17, 2019

Each member of the Board of Directors (the "***Board***") of Allogene Therapeutics, Inc. (the "***Company***") who is a non-employee director of the Company (each such member, a "***Non- Employee Director***") will receive the compensation described in this Non-Employee Director Compensation Policy (the "***Director Compensation Policy***") for his or her Board service following the closing of the initial public offering of the Company's common stock (the "***IPO***").

A Non-Employee Director may decline all or any portion of his or her compensation by giving notice to the Company prior to the date cash is to be paid or equity awards are to be granted, as the case may be.

Annual Cash Compensation

Commencing January 1, 2019, each Non-Employee Director will receive the cash compensation set forth below for service on the Board. The annual cash compensation amounts will be payable in equal quarterly installments, in arrears following the end of each quarter in which the service occurred, pro-rated for any partial months of service. All annual cash fees are vested upon payment.

1. Annual Board Service Retainer:
   a. All Eligible Directors: $40,000

2. Annual Committee Member Service Retainer:
   a. Member of the Audit Committee: $12,500
   b. Member of the Compensation Committee: $7,500
   c. Member of the Nominating and Corporate Governance Committee: $5,000

3. Annual Committee Chair Service Retainer (in lieu of Committee Member Service Retainer):
   a. Chair of the Audit Committee: $25,000
   b. Chair of the Compensation Committee: $15,000
   c. Chair of the Nominating and Corporate Governance Committee: $10,000
   d. Chair of the International and Business Development Oversight Committee: $100,000

In addition, the members of the International and Business Development Oversight Committee, excluding the Chair, are eligible to receive compensation of $3,500 per meeting.

Equity Compensation

Equity awards will be granted under the Company's Amended and Restated 2018 Equity Incentive Plan (the "***Plan***"), adopted in connection with the IPO. All stock options granted under this policy will be Nonstatutory Stock Options (as defined in the Plan), with a term of ten years from the date of grant and an exercise price per share equal to 100% of the Fair Market Value (as defined in the Plan) of the underlying common stock of the Company on the date of grant.

(a) Automatic Equity Grants.

(i) **Initial Grant for New Directors.** Without any further action of the Board, each person who, after the IPO, is elected or appointed for the first time to be a Non-Employee Director will automatically, upon the date of his or her initial election or appointment to be a Non- Employee Director (or, if such date is not a market trading day, the first market trading day thereafter), be granted (i) a Nonstatutory Stock Option to purchase shares of common stock of the Company (the "***Initial Option Grant***") and (ii) a restricted stock unit award covering shares of common stock of the Company (the "***Initial RSU Grant***"), whereby the Initial Option Grant and Initial RSU Grant shall together have a total grant date value of $850,000 (with the shares covered by the award rounded down to the nearest whole share). The recipient shall designate the proportionate share between the Initial Option Grant and Initial RSU Grant prior to or on the date of grant. The grant date value will be calculated in accordance with the Black-Scholes option valuation methodology or such other methodology as the Board or the Compensation Committee of the Board may determine prior to the grant of such award. Each Initial Option Grant will vest in a series of 36 successive equal monthly installments over the three-year period measured from the date of grant. Each Initial RSU Grant will vest in a series of three successive equal annual installments over the three-year period measured from the date of grant.

(ii) **Annual Grant.** Without any further action of the Board, at the close of business on the date of each Annual Meeting following the IPO, each person who is then a Non- Employee Director will automatically be granted (i) a Nonstatutory Stock Option to purchase shares of common stock (the "***Annual Option Grant***") and (ii) a restricted stock unit award covering shares of common stock of the Company (the "***Annual RSU Grant***"), whereby the Annual Option Grant and Annual RSU Grant shall together have a total grant date value of $425,000 (with the shares covered by the award rounded down to the nearest whole share). The recipient shall designate the proportionate share between the Annual Option Grant and Annual RSU Grant prior to or on the date of grant. The grant date value will be calculated in accordance with the Black-Scholes option valuation methodology or such other methodology as the Board or the Compensation Committee of the Board may determine prior to the grant of such award. Each Annual Option Grant will vest in a series of 12 successive equal monthly installments over the one-year period measured from the date of grant. Each Annual RSU Grant will vest on the one-year anniversary of the date of grant.

(b) **Vesting; Change in Control.** All vesting is subject to the Non-Employee Director's "***Continuous Service***" (as defined in the Plan) on each applicable vesting date. Notwithstanding the foregoing vesting schedules, for each Non-Employee Director who remains in Continuous Service with the Company until immediately prior to the closing of a "***Change in Control***" (as defined in the Plan), the shares subject to his or her then-outstanding equity awards that were granted pursuant to this policy will become fully vested immediately prior to the closing of such Change in Control.

(c) **Remaining Terms.** The remaining terms and conditions of each award, including transferability, will be as set forth in the Company's Director Option Grant Package or Director RSU Grant Package, as applicable, in the forms adopted from time to time by the Board.

Expenses

The Company will reimburse Non-Employee Director for ordinary, necessary and reasonable out- of-pocket travel expenses to cover in-person attendance at and participation in Board and committee

meetings; *provided*, that the Non-Employee Director timely submit to the Company appropriate documentation substantiating such expenses in accordance with the Company's travel and expense policy, as in effect from time to time.

[***] Certain information in this document has been omitted from this exhibit because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

EXCLUSIVE LICENSE AGREEMENT

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EXCLUSIVE LICENSE AGREEMENT

THIS EXCLUSIVE LICENSE AGREEMENT (the "***Agreement***") is entered into as of December 14, 2020 (the "***Effective Date***"), by and between **ALLOGENE THERAPEUTICS, INC.**, a Delaware corporation having a place of business at 210 East Grand Avenue, South San Francisco, CA 94080 ("***Allogene***") and **ALLOGENE OVERLAND BIOPHARM (CY) LIMITED**, an exempted company incorporated in the Cayman Islands with limited liability ("***Licensee***") (collectively the "***Parties***" and each a "***Party***").

Recitals

WHEREAS, Allogene owns a proprietary AlloCAR T™ technology platform and is developing *off-the-shelf* CAR T therapeutic candidates by engineering therapies from the T cells of healthy donors, targeting BCMA (ALLO-715 and ALLO-605), CD70 (ALLO-316), FLT3 (ALLO-819) and DLL3, using ALLO-647 as a lymphodepletion agent, which is part of the pre-conditioning regimen for treating patients with hematologic cancers or solid tumors;

WHEREAS, Licensee is a joint venture formed by Overland Pharmaceuticals, Inc. ("***Overland***") and Allogene pursuant to a Share Subscription Agreement, dated as of December 14, 2020, (the "***Share Subscription Agreement***"), for the purpose of developing and commercializing certain Products in the Licensee Territory (each as defined below); and

WHEREAS, in connection with the foregoing joint venture arrangement, Licensee desires to obtain from Allogene, and Allogene desires to grant to Licensee, an exclusive license under the Allogene Technology to develop, manufacture and commercialize the Products (as defined hereinafter), including the right to utilize ALLO-647 as part of the lymphodepletion regimen for the development and commercialization of the Products in the Field in the Licensee Territory (each as defined below), subject to the terms and conditions of this Agreement;

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Allogene and Licensee hereby agree as follows:

Article 1
Definitions

1.1 "***647 Compound***" means ALLO-647 (with a structure set forth in a side letter delivered to Licensee), an anti-CD52 monoclonal antibody that is used as a lymphodepletion agent.

1.2 "***647 Product***" means a pharmaceutical formulation containing the 647 Compound as an Active Ingredient, alone or in combination with other Active Ingredients (whether co-formulated or co-packaged, but not in combination with any Active Ingredient that is proprietary to Allogene but that is not a Compound), in any formulation or dosage form and for any mode of administration.

1.3 "***Acquiror***" shall mean a Third Party that acquires a Party (and therefore is deemed to be an Affiliate of such Party for purposes of Sections 1.10, 1.11, 1.78, and 1.79, as applicable) through a Change of Control, together with any affiliates of such Acquiror existing immediately prior to the consummation of the Change of Control. For purposes of clarity, an "**Acquiror**" of a Party shall exclude (a) the applicable Party and all of its Affiliates existing immediately prior to the consummation of the Change of Control and (b) any person or entity that becomes an affiliate of the Acquiror following the consummation of the Change of Control (which person or entity shall, for purposes of clarity, be considered an Affiliate of the applicable Party hereunder for purposes of Sections 1.10, 1.11, 1.78, and 1.79, as applicable).

1.4 "***Acquiror IP***" shall mean Patents and Know-How which are (a) controlled by an Acquiror immediately prior to the consummation of the Change of Control pursuant to which such Acquiror acquired a Party or (b) controlled by the Acquiror on or after the effective date of the Change of Control and, in each case, ((a) and (b)), which Patents and Know-How (i) are not Controlled by the Party acquired by the Acquiror or any of such Party's Affiliates (excluding, for purposes of this provision, the Acquiror and Affiliates of the acquired Party that are such Affiliates by virtue of controlling, being controlled by or being under common control with the Acquiror as of the effective date of the Change of Control) and (ii) were developed, invented or obtained without the direct or indirect use of any (A) Allogene Technology (in the case of an Acquiror of Allogene) or Licensee Technology (in the case of an Acquiror of Licensee), as applicable; *provided*, *however*, that such Patents and Know-How shall not be considered Acquiror IP (and therefore shall therefore be included as Allogene Patents or Allogene Know-How, or Licensee Patents or Licensee Know-How, as applicable, *provided* that they otherwise satisfy the definitions of Allogene Patents or Allogene Know-How, or Licensee Patents or Licensee Know-How, as applicable) in the event that any such Patents and/or Know-How are actually used by the Acquiror or any of its affiliates (including the acquired Party) at any time during the Term in the Development, Manufacture or Commercialization of any of the Compounds or Products.

1.5 "***Active Ingredient***" means any clinically active material that provides pharmacological activity in a pharmaceutical product (excluding formulation components such as coatings, stabilizers, excipients or solvents, adjuvants, controlled release technologies, materials to increase bioavailability, solubility or stability, or delivery means).

1.6 "***Affiliate***" shall mean any company or entity controlled by, controlling, or under common control with a Party. For the purpose of this definition, an entity shall be deemed to "***control***" another entity, if it owns directly or indirectly, more than 50% of the outstanding voting securities, capital stock, or other comparable equity or ownership interest of such entity, or exercises equivalent influence over such entity. For purposes of this Agreement, neither Allogene nor Overland (nor any of Overland's other affiliates) shall be deemed to be an Affiliate of Licensee and Licensee shall not be deemed an Affiliate of Allogene.

1.7 "***Aggregate Annual Net Sales***" shall mean aggregate Net Sales of the Products by Licensee, its Affiliates and their respective sublicensees in the Field in the Licensee Territory in a Calendar Year.

1.8 [***].

1.9 [***].

1.10 "***Allogene Inventions***" shall have the meaning provided in Section 11.1(b).

1.11 "***Allogene Invention Patents***" means any Patent Covering any Allogene Invention.

1.12 "***Allogene Know-How***" shall mean all Know-How that is Controlled by Allogene or any of its Affiliates, as of the Effective Date, or, subject to Section 2.7, Controlled at any time during the Term by Allogene or any of its Affiliates, and which relates to the Compounds or Products and is necessary or reasonably useful for the Development, Manufacturing, use or Commercialization of the Compounds or Products in the Field in the Licensee Territory. For clarity, Allogene Know-How includes (i) Know-How within the Platform Inventions, (ii) Know-How within Allogene Inventions and (iii) Allogene's interest in Know-How within the Joint Inventions, in each case to the extent such Know-How is necessary or reasonably useful for the Development, Manufacturing, use or Commercialization of the Compounds or Products in the Field in the Licensee Territory. Notwithstanding the foregoing, Allogene Know-How shall not include any Know-How that is Acquiror IP.

1.13 "***Allogene Patents***" shall mean any Patents that (i) are Controlled by Allogene or any of its Affiliates, as of the Effective Date or, subject to Section 2.7, Controlled, at any time during the Term, by Allogene or any of its Affiliates and (ii) Cover the Development, Manufacturing, use or Commercialization of the Compounds or Products in the Field in the Licensee Territory. A list of Allogene Patents as of the Effective Date is attached hereto on Schedule 1.13. For clarity, Allogene Patents include (i) Patents within the Platform Inventions, (ii) Patents within Allogene Invention and (iii) Allogene's interest in Patents within the Joint Inventions, in each case to the extent such Patents Cover the Development, Manufacturing, use or Commercialization of the Compounds or Products in the Field in the Licensee Territory. Notwithstanding the foregoing, Allogene Patents shall not include any Patents that are deemed to be Acquiror IP.

1.14 "***Allogene Platform***" shall mean [***].

1.15 ***"Allogene Product Patent"*** shall have the meaning provided in Section 11.2(c).

1.16 ***"Allogene Protected Patent"*** shall have the meaning provided in Section 11.2(c).

1.17 "***Allogene Technology***" shall mean the Allogene Know-How and Allogene Patents.

1.18 "***Allogene Territory***" shall mean anywhere in the world other than the Licensee Territory.

1.19 "***Applicable Laws***" shall mean the applicable provisions of any and all national, supranational, regional, state and local laws, treaties, statutes, rules, regulations, administrative

codes, guidance, ordinances, judgments, decrees, directives, injunctions, orders, permits (including Regulatory Approvals) of or from any court, arbitrator, Regulatory Authority or governmental agency or authority having jurisdiction over or related to the subject item or subject person, including the FCPA, Export Control Laws and other comparable laws.

1.20 "***Bankruptcy Laws***" shall have the meaning provided in Section 12.6.

1.21 "***Business Day***" shall mean any day that is not a Saturday, a Sunday or other day on which banks are required or authorized by law to close in the State of California, U.S., or mainland China.

1.22 "***BCMA Compound***" means ALLO-715 or ALLO-605 (with structures set forth in a side letter delivered to Licensee), each an allogeneic CAR-T therapy engineered with Allogene Technology, targeting B-Cell Maturation Antigen (BCMA).

1.23 "***BMCA Product***" means a pharmaceutical formulation containing the BMCA Compound as an Active Ingredient, alone or in combination with other Active Ingredients (whether co-formulated or co-packaged, but not in combination with any Active Ingredient that is proprietary to Allogene but that is not a Compound), in any formulation or dosage form and for any mode of administration.

1.24 "***Calendar Quarter***" shall mean each period of three (3) consecutive months commencing on January 1, April 1, July 1 or October 1.

1.25 "***Calendar Year***" shall mean each period of twelve (12) consecutive months commencing on January 1.

1.26 "***CAR-T***" means T-cells expressing chimeric antigen receptor(s).

1.27 "***CD70 Compound***" means ALLO-316 (with a structure set forth in in a side letter delivered to Licensee), an allogeneic CAR-T therapy engineered with Allogene Technology, targeting CD70.

1.28 "***CD70 Product***" means a pharmaceutical formulation containing the CD70 Compound as an Active Ingredient, alone or in combination with other Active Ingredients (whether co-formulated or co-packaged, but not in combination with any Active Ingredient that is proprietary to Allogene but that is not a Compound), in any formulation or dosage form and for any mode of administration.

1.29 "***Change of Control***" means, with respect to a Party, that: (a) any Third Party acquires directly or indirectly the beneficial ownership of any voting security of such Party, or if the percentage ownership of such Third Party in the voting securities of such Party is increased through stock redemption, cancellation, or other recapitalization, and immediately after such acquisition or increase such Third Party is, directly or indirectly, the beneficial owner of voting securities representing more than 50% of the total voting power of all of the then outstanding voting securities of such Party; (b) a merger, consolidation, recapitalization, or reorganization of

such Party is consummated which would result in shareholders or equity holders of such Party immediately prior to such transaction, no longer owning at least 50% of the outstanding voting securities of the surviving entity (or its parent entity) immediately following such transaction; or (c) there is a sale or transfer to a Third Party of all or substantially all of such Party's consolidated assets taken as a whole, through one or more related transactions.

1.30 "***Clinical Trial***" means any clinical testing of a Product in human subjects.

1.31 "***CMC Information***" shall mean information related to the chemistry, manufacturing and controls of any of the Products, as specified by the applicable Regulatory Authorities.

1.32 "***CMOs***" means Third Party contract manufacturing organizations.

1.33 "***COGS***" means, with respect to a Product, the costs to Manufacture the Product (or the Compound contained therein). COGS shall be a "standard cost" per unit (calculated annually), which shall be comprised of the following elements which shall be calculated in accordance with Licensee's accounting standards: (a) direct labor (the actual cost of employees or external services engaged in direct Manufacturing activities who are directly employed in Manufacturing the Product), (b) direct materials (the actual costs incurred in Manufacturing or purchasing materials for Manufacture, including freight-in costs, sales and excise taxes imposed thereon and customs duty and charges levied by government authorities, and all costs of packaging components), (c) pro rata facility costs (meaning rent, property taxes, depreciation of leaseholds and property, utilities, spare parts, maintenance contracts, insurance, security services) for the Manufacture of the Product, (d) Manufacturing equipment depreciation or other equipment costs, and (e) document control, purchasing, warehouse management (with such allocations to be based on estimated service levels, headcount or square footage occupancy depending on the category). To the extent that the Product (or the Compound contained therein) is sourced from a Third Party manufacturer, the actual price paid to the Third Party for the manufacture and supply of the Product (or the Compound contained therein), respectively, shall be the COGS.

1.34 "***Combination Product***" means a Product that contains a Compound and one (1) or more other clinically or pharmacologically Active Ingredients in a single formulation or final package presentation for sale as a single unit (including separate unit doses so configured).

1.35 "***Commercialization***" shall mean, with respect to a Product, all activities undertaken before and after obtaining Regulatory Approvals relating specifically to the pre-launch, launch, promotion, detailing, medical education and medical liaison activities, marketing, pricing, reimbursement, sale, and distribution of such Product, including strategic marketing, sales force detailing, advertising, market product support, all customer support, distribution, and invoicing and sales activities. "***Commercialize***" and "***Commercializing***" shall have the correlative meanings.

1.36 "***Commercially Reasonable Efforts***" shall mean, (a) where applied to carrying out specific tasks and obligations of a Party under this Agreement, expending (on its own and/or

acting through any of its Affiliates, sublicensees or agents) reasonable, diligent, good faith efforts and resources to accomplish such task or obligation, consistent with the exercise of prudent scientific and business judgment and commercially reasonable practices, as a pharmaceutical company of similar size and resources operating in developed markets (or, in the case of Licensee, developing markets in the Licensee Territory) would normally use to accomplish a similar task or obligation under similar circumstances in accordance with Applicable Laws; and (b) where applied to the Development and/or Commercialization of the Product under this Agreement, the use of reasonable, diligent, good faith efforts and resources, in an active and ongoing program, consistent with the exercise of prudent scientific and business judgment and commercially reasonable practices as normally used by a pharmaceutical company of similar size and resources operating in developed markets (or, in the case of Licensee, developing markets in the Licensee Territory) for a priority product discovered or identified internally, which product is at a similar stage of development or product life and is of similar market potential and strategic value, taking into account relevant commercial, legal, and regulatory factors including measures of patent coverage, relative safety and efficacy, product profile, the competitiveness of the marketplace, the proprietary position of such product, the regulatory structure involved, anticipated or approved labeling, the profitability of the product in light of pricing and reimbursement issues, and other relevant factors, in accordance with Applicable Laws, all based on conditions then prevailing. It is understood that in fulfilling any obligation to use Commercially Reasonable Efforts in this Agreement, a Party shall not take into account (i) any other pharmaceutical product such Party is then researching, developing, manufacturing or commercializing outside the scope of this Agreement, (ii) the payments required to be made by such Party to the other Party under this Agreement, (iii) such Party's access to sufficient personnel, capital or resources to conduct its responsibilities hereunder in accordance with the foregoing standards or (iv) political considerations. "Commercially Reasonable Efforts" shall be determined on a Product-by-Product and jurisdiction-by-jurisdiction basis, and it is anticipated that the level of efforts required may be different for different jurisdictions and may change over time, reflecting changes in the status of the Products, as applicable, and jurisdictions involved. For clarity, "Commercially Reasonable Efforts" will not mean that a Party guarantees that it will actually accomplish the applicable task or objective.

1.37 "***Compound***" shall mean BCMA Compound, CD70 Compound, FLT3 Compound and DLL3 Compound.

1.38 "***Confidential Information***" shall mean all Information and other proprietary scientific, marketing, financial or commercial information or data, which is generated by or on behalf of a Party or its Affiliates and which one Party or any of its Affiliates has furnished or made available to the other Party or its Affiliates, whether in oral, written or electronic form, including but not limited to any disclosed information of a potential licensor pursuant to Section 2.7(a).

1.39 "***Control***" (including any variations such as "***Controlled***" and "***Controlling***") shall mean, with respect to any material (including Regulatory Documents), Information, Patents or other intellectual property rights, possession by a Party of the right, power and authority (whether by ownership, license or otherwise, other than by virtue of any rights granted under this

Agreement) to grant access to, to grant use of, or to grant a license or a sublicense to such materials, Know-How, Information, Patents or intellectual property rights without violating the terms of any agreement or other arrangement with any Third Party or additional payment obligations.

1.40 "***Cover***" shall mean, with respect to Patent, a Valid Claim thereof would (absent a license or ownership thereof) be infringed by the Manufacturing, use, offering for sale, sale or importation of Products. "***Covered***" and "***Covering***" shall have the correlative meanings.

1.41 "***Data***" shall mean all data, including CMC Information, non-clinical data, preclinical data and clinical data, generated by or on behalf of a Party or its Affiliates or their respective (sub)licensees pursuant to activities conducted under this Agreement.

1.42 "***Development***" shall mean, with respective to a Product, all activities conducted after the Effective Date relating to preclinical and clinical studies, in each of the foregoing, in furtherance of obtaining or maintaining Regulatory Approval of a Product, including but not limited to toxicology testing, statistical analysis, publication and presentation of study results with respect to such product, and the reporting, preparation and submission of applications for obtaining, registering and maintaining Regulatory Approval of such Product. "***Develop***" and "***Developing***" shall have the correlative meanings. For clarity, "Development" shall not include any discovery research activities, but shall include clinical trials commenced after Regulatory Approval.

1.43 **"*Development Plan*"** shall have the meaning provided in Section 3.2.

1.44 "***Disclosing Party***" shall have the meaning provided in Section 9.1

1.45 "***DLL3 Compound***" means the first allogeneic CAR-T therapy engineered with Allogene Technology, targeting DLL3 that is part of an Allogene-sponsored Clinical Trial.

1.46 "***DLL3 Product***" means a pharmaceutical formulation containing the DLL3 Compound as an Active Ingredient, alone or in combination with other Active Ingredients (whether co-formulated or co-packaged, but not in combination with any Active Ingredient that is proprietary to Allogene but that is not a Compound), in any formulation or dosage form and for any mode of administration.

1.47 "***Effective Date***" shall have the meaning provided in the introductory paragraph of this Agreement.

1.48 "***Executive Officers***" shall have the meaning provided in Section 7.1.

1.49 "***Existing Allogene In-Licenses***" means the existing agreements between Allogene, on the one hand, and any Third Party (each, an "***Upstream Licensor***") set forth on Schedule 1.49, as may be amended from time to time , including pursuant to Section 2.7(b).

1.50 "***Export Control Laws***" shall mean all applicable U.S. laws and regulations relating to (a) sanctions and embargoes imposed by the Office of Foreign Assets Control of the

U.S. Department of Treasury or (b) the export or re-export of commodities, technologies, or services, including the Export Administration Act of 1979, 24 U.S.C. §§ 2401-2420, the International Emergency Economic Powers Act, 50 U.S.C. §§ 1701-1706, the Trading with the Enemy Act, 50 U.S.C. §§ 1 et. Seq., the Arms Export Control Act, 22 U.S.C. §§ 2778 and 2779, and the International Boycott Provisions of Section 999 of the U.S. Internal Revenue Code of 1986 (as amended).

1.51 "***FCPA***" shall mean the U.S. Foreign Corrupt Practices Act (15 U.S.C. Section 78dd-1, et. Seq.) as amended.

1.52 "***FDA***" shall mean the U.S. Food and Drug Administration and any successor entity thereto.

1.53 "***Field***" shall mean human oncologic therapeutic, diagnostic, prophylactic and prognostic purposes.

1.54 "***First Commercial Sale***" shall mean, with respect to a Product, the first sale by Licensee or its Affiliate or Sublicensee of a Product in a jurisdiction in the Licensee Territory.

1.55 "***FLT3 Compound***" means ALLO-819 (with a structure set forth in in a side letter delivered to Licensee), an allogeneic CAR-T therapy engineered with Allogene Technology, targeting FLT3.

1.56 "***FLT3 Product***" means a pharmaceutical formulation containing the FLT3 Compound as an Active Ingredient, alone or in combination with other Active Ingredients (whether co-formulated or co-packaged, but not in combination with any Active Ingredient that is proprietary to Allogene but that is not a Compound), in any formulation or dosage form and for any mode of administration.

1.57 "***FTE***" shall mean full time equivalent.

1.58 "***GCP***" shall mean the then-current standards, practices and procedures for good clinical practices promulgated or endorsed by NMPA or any Regulatory Authority in the Licensee Territory, as may be updated from time to time, including applicable guidelines promulgated under the ICH guidelines.

1.59 "***GLP***" shall mean the then-current standards, practices and procedures for good laboratory practices promulgated or endorsed by NMPA or any Regulatory Authority in the Licensee Territory, as may be updated from time to time, including applicable guidelines promulgated under the ICH guidelines.

1.60 "***GMP***" shall mean the then-current standards, practices and procedures for good manufacturing practices promulgated or endorsed by NMPA or any Regulatory Authority in the Licensee Territory, as may be updated from time to time, including applicable guidelines promulgated under the ICH guidelines.

1.61 "***Governmental Authority***" means any multi-national, national, federal, state, local, municipal, provincial or other governmental authority of any nature (including any governmental division, prefecture, subdivision, department, agency, bureau, branch, office, commission, council, court or other tribunal).

1.62 "***ICC***" shall have the meaning provided in Section 14.2(a).

1.63 "***ICH***" shall mean the International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use.

1.64 "***IND***" means any Investigational New Drug application (including any amendment or supplement thereto) filed with the FDA pursuant to Part 312 of Title 21 of the U.S. Code of Federal Regulations, including any amendments thereto or if applicable, a comparable application or submission filed with a Regulatory Authority outside the U.S. for the investigation of any product in any other country or group of countries (such as a Clinical Trial Application in the EU or drug trial clinical application made to NMPA's Center for Drug Evaluation).

1.65 "***Indemnitee***" shall have the meaning provided in Section 13.3.

1.66 "***Indemnitor***" shall have the meaning provided in Section 13.3.

1.67 "***Information***" shall mean tangible and intangible techniques, technology, practices, trade secrets, inventions (whether patentable or not), processes, formulations, compounds, products, biological materials, cell lines (it being understood that any rights to use "Information" include the rights to use such cell lines), samples of assay components, media, designs, formulas, ideas, programs, software models, algorithms, developments, experimental works, protocols, methods, knowledge, know-how, skill, experience, test data and results (including pharmacological, toxicological and non-clinical and clinical data and results), compilations of data, other works of analytical and quality control data, results, descriptions, compositions of matter, Regulatory Documents, minutes, correspondence and strategy.

1.68 "***Initiation***" means, with respect to a given Clinical Trial, the administration of the first dose of a Product to the first subject in such Clinical Trial in accordance with the protocol for such Clinical Trial.

1.69 "***Invention***" shall mean any inventions and/or discoveries, including processes, manufacture, composition of matter, Information, methods, assays, designs, protocols, and formulas, and improvements or modifications thereof, patentable or otherwise, that are generated, developed, conceived or reduced to practice (constructively or actually) by or on behalf of a Party or its Affiliates or their respective (sub)licensees or subcontractors relating to the Products or Allogene Platform during the Term under this Agreement, including all rights, title and interest in and to the intellectual property rights therein and thereto.

1.70 "***Joint Invention***" shall have the meaning provided in Section 11.1(b).

1.71 "***Joint Invention Patent***" shall mean any Patent claiming a Joint Invention.

1.72 "***JSC***" shall have the meaning provided in Section 7.1.

1.73 "***Know-How***" shall mean any and all Information and Data, including without limitation, proprietary scientific or technical information, results and Data of any type whatsoever, in any tangible or intangible form whatsoever, including databases, safety information, practices, methods, techniques, specifications, formulations, formulae, knowledge, know-how, skill, experience, test data including pharmacological, medicinal chemistry, biological, chemical, biochemical, toxicological and clinical test data, analytical and quality control data, stability data, studies and procedures, and manufacturing process and development information, results and data.

1.74 "***Known Third Party Obligations***" shall mean any and all obligations, including but not limited to, sublicense fee, milestone payment, royalty payment and other payment obligations under the Existing Allogene In-Licenses to the applicable Upstream Licensors and under any Third Party IP License pursuant to Section 2.7(b) that may be triggered as a result of Allogene's grant of the licenses to Licensee pursuant to this Agreement or Licensee's exploitation of such licenses pursuant to this Agreement. All Third Party Obligations, as of the Effective Date, are set forth in Schedule 1.74 attached hereto.

1.75 "***Licensed Mice Materials***" shall have the meaning ascribed to such term in Upstream License 1.

1.76 "***Licensee Invention***" shall have the meaning provided in Section 11.1(b).

1.77 "***Licensee Invention Patents***" shall mean any Patent claiming a Licensee Invention.

1.78 "***Licensee Know-How***" shall mean all Know-How with respect to the Products, which is (a) Controlled by Licensee or any of its Affiliates during the Term, and (b) necessary or reasonably useful for the Development, Manufacturing, use or Commercialization of the Products, including Know-How within Licensee Inventions and Licensee's interest in Know-How within the Joint Inventions. Licensee Know-How shall not include any Know-How that is deemed to be Acquiror IP.

1.79 "***Licensee Patents***" shall mean any Patents that (i) as of the Effective Date and during the Term, are Controlled by Licensee or any of its Affiliates and (ii) Cover the Development, Manufacturing, use or Commercialization of the Products in the Field in the Licensee Territory. The Licensee Invention Patents shall constitute "Licensee Patents" hereunder. Licensee Patents shall not include any Patents that are deemed to be Acquiror IP.

1.80 "***Licensee Technology***" shall mean the Licensee Know-How and Licensee Patents.

1.81 "***Licensee Territory***" shall mean the PRC, Taiwan, South Korea and Singapore.

1.82 "***MAA***" shall mean an application for the authorization for marketing of a Product, including all amendments and supplements thereto, filed with any Regulatory Authority to gain approval to market the Product in a given jurisdiction or jurisdiction.

1.83 "***Manufacture***" and "***Manufacturing***" shall mean, with respect to a product, activities directed to manufacturing, processing, filling, finishing, packaging, labeling, quality control, quality assurance testing and release, post-marketing validation testing, inventory control and management, storing and transporting such product, including oversight and management of vendors therefor.

1.84 "***Modified Mice***" shall have the meaning ascribed to such term in Upstream License 1.

1.85 "***Net Sales***" shall mean, with respect to the extent allocable to the Products: a Product, the gross amounts invoiced for sales or other dispositions of the Product by or on behalf of Licensee or any of its Affiliates or Sublicensees (each, a "***Selling Party***") to Third Parties (other than Sublicensees), less deductions actually incurred, allowed, paid, accrued or otherwise specifically allocated to the Product by the Selling Party in accordance with U.S. generally accepted accounting principles or international financial reporting standards, in either case, consistently applied throughout the organization of the applicable Selling Party, and to the extent permitted under applicable law in the Licensee Territory: [***].

In no event shall any particular amount, identified above, be deducted more than once in calculating Net Sales (*i.e.*, no "double counting" of reductions).

If a Product is sold in combination with other pharmaceutical or biologics products, diagnostic products, or Active Ingredients that are not themselves Products (collectively, the "***Combination Components***", and taken together (whether co-formulated, co-packaged or for co-administration) with the Product, the "***Bundled Product***") the Net Sales applicable to such Product will be [***].

Upon Licensee's request and only upon a material change in applicable law or accounting regulations affecting the definition of Net Sales, Allogene agrees to discuss in good faith reasonable adjustments to the definition of "Net Sales".

1.86 "***NMPA***" shall mean the National Medical Products Administration in China, and any successor entity thereto or its provincial or local counterpart.

1.87 "***OFAC***" shall have the meaning provided in Section 10.3(c).

1.88 "***Party***" shall mean Allogene or Licensee individually, and "***Parties***" shall mean Allogene and Licensee collectively.

1.89 "***Patents***" shall mean patents and patent applications, including provisional applications, continuations, continuations-in-part, continued prosecution applications, divisions, substitutions, reissues, additions, renewals, reexaminations, extensions, term restorations, confirmations, registrations, revalidations, revisions, priority rights, requests for continued

examination and supplementary protection certificates granted in relation thereto, as well as utility models, innovation patents, petty patents, patents of addition, inventor's certificates, and equivalents in any jurisdiction or jurisdiction.

1.90 "***Pivotal Trial***" means with respect to a Product, a Clinical Trial that at the time of Initiation (or any later point, if applicable), is expected, based on guidance from the FDA or other applicable Regulatory Authority, to evaluate the safety and efficacy of the Products and to provide the basis for submitting an application for Regulatory Approval for such Product. For avoidance of doubt, a Clinical Trial or portion thereof may be a Pivotal Trial regardless of whether the protocol for such Clinical Trial describes it as a Phase II Clinical Trial, Phase III Clinical Trial or any variation thereof, including but not limited to a Phase II/III Clinical Trial or Phase IIb Clinical Trial.

1.91 "***PRC***" means the People's Republic of China, including mainland China ("***China***"), Hong Kong Special Administrative Region and Macau Special Administrative Region.

1.92 "***Product***" shall mean a pharmaceutical formulation containing a Compound (such as BCMA Compound, CD70 Compound, FLT3 Compound, DLL3 Compound) as an Active Ingredient, alone or in combination with other Active Ingredients (whether co-formulated or co-packaged, but not in combination with any Active Ingredient that is proprietary to Allogene but that is not the Compound), in any formulation or dosage form and for any mode of administration.

1.93 "***Receiving Party***" shall have the meaning provided in Section 9.1.

1.94 "***Regulatory Approval***" shall mean any and all approvals, licenses, permits, registrations or authorizations of or from any Regulatory Authority that are necessary to market and sell a pharmaceutical product in any jurisdiction or other jurisdiction.

1.95 "***Regulatory Authority***" shall mean any jurisdiction, federal, supranational, state or local regulatory agency, department, bureau or other governmental or regulatory authority having the administrative authority to regulate the development or marketing of pharmaceutical products in any jurisdiction or other jurisdiction.

1.96 "***Regulatory Exclusivity***" shall mean marketing or manufacturing exclusivity conferred by the applicable Regulatory Authority in a jurisdiction on the holder of a marketing approval for a pharmaceutical product in such jurisdiction, including, by way of example and not of limitation, regulatory data exclusivity, orphan drug exclusivity, new chemical entity exclusivity and pediatric exclusivity.

1.97 "***Regulatory Documents***" shall mean, with respect to a Product, regulatory applications (including MAA), submissions, notifications, communications, correspondence, registrations, Regulatory Approvals and/or other filings made to, received from or otherwise conducted with a Regulatory Authority in order to Develop, Manufacture, market, sell or otherwise Commercialize such Product in a particular jurisdiction.

1.98 "***Regulatory Materials***" shall mean any testing materials requested by the Regulatory Authority in the Licensee Territory to complete local drug testing for the purpose of clinical supply testing, or product specification validation or the local testing for commercial goods. Regulatory Materials potentially will include drug substance, drug products, reference standards, special reagents and special volume for analytic testing, blank excipients, special analytic equipment, cell line, and the like related to the Products. Regulatory Materials will be provided to the Regulatory Authority as required by local regulation or policy requests[***].

1.99 "***Royalty Term***" shall have the meaning provided in Section 8.4.

1.100 "***SEC***" shall have the meaning provided in Section 9.4(a).

1.101 "***Serious Material Breach***" shall mean any willful or grossly negligent breach by Allogene or any of its Affiliates of one or more of the following provisions: (i) grant of exclusive rights to Licensee under Section 2.1; (ii) confidentiality obligations under Article 9 with respect to the results of the Development or Commercialization of any Product and any material information contained in any registration dossier or submission for Regulatory Approval for any Product; (iii) obligations under the last sentence in Section 2.5; or (iv) obligations under Section 2.7(B). For the avoidance of doubt, a Serious Material Breach will also qualify as a breach of a material obligation for purposes of Section 12.2(a).

1.102 "***Subject Antibodies***" shall have the meaning ascribed to such term in Upstream License 1.

1.103 "***Subject Antibody Materials***" shall have the meaning ascribed to such term in Upstream License 1.

1.104 "***Sublicensee***" shall mean any Third Party to whom Licensee has directly or indirectly granted a sublicense under all or any portion of the license grant pursuant to Section 2.1.

1.105 "***Supply and Quality Agreements***" shall mean and collectively include all supply and quality agreements entered into by Allogene (as supplier) and Licensee (as purchaser) in connection with this Agreement, including without limitation, the Clinical Supply Agreements, Clinical Quality Agreements, 647 Commercial Supply and Quality Agreement, and Other Commercial Supply and Quality Agreements.

1.106 "***Term***" shall have the meaning provided in Section 12.1.

1.107 "***Third Party***" shall mean any entity other than the Parties and their Affiliates.

1.108 "***Upstream License 1***" means [***].

1.109 "***Upstream License 2***" means [***].

1.110 "***Upstream License 3***" means [***].

1.111 "***Upstream Licensor 1***" shall mean [***].

1.112 [***].

1.113 [***].

1.114 [***].

1.115 [***].

1.116 *"**Upstream Licensor 2***" shall mean [***].

1.117 [***].

1.118 "***Upstream Licensor 3***" means [***].

1.119 [***].

1.120 "***U.S.***" shall mean the United States of America and its territories and possessions.

1.121 "***Valid Claim***" shall mean a claim contained in (a) an issued and unexpired Patent, which claim has not been found to be unpatentable, invalid, revocable or unenforceable by a decision of a court or other authority of competent jurisdiction in the subject jurisdiction or jurisdiction, which decision is unappealable or unappealed within the time allowed for appeal, and has not been admitted to be invalid or unenforceable through abandonment, reissue, disclaimer or otherwise, or (b) a Patent application that has not been irretrievably cancelled, withdrawn, abandoned or rejected and that has been pending for less than [***]years. If a claim of a Patent application that ceased to be a Valid Claim under clause (b) of the preceding sentence because of the passage of time later issues as a part of a Patent within clause (a) of the preceding sentence, then it shall again be considered a Valid Claim effective as of the issuance of such Patent.

Article 2
License

2.1 License Grant.

(a) Exclusive License Grant. Subject to the terms and conditions of this Agreement, Allogene hereby grants to Licensee, during the Term, an exclusive (even as to Allogene, subject to Sections 2.5 and 2.6), royalty-bearing license, with the right to grant sublicenses solely in accordance with Section 2.3, under the Allogene Technology solely to Develop, import and Commercialize the Compounds and Products in the Field in the Licensee Territory.

(b) Manufacturing License Grant. Subject to the terms and conditions of this Agreement, on a Compound-by-Compound and Product-by-Product basis, Allogene hereby grants to Licensee an exclusive royalty-bearing license, with the right to grant sublicenses solely in accordance with Section 2.3, under the Allogene Technology to Manufacture or have Manufactured (by a CMO approved by Allogene) the applicable Product solely for Commercializing the Products in the Field in the Licensee Territory, which license will become effective upon the Manufacturing Technology Transfer related to such Product in accordance with Section 5.3. Prior to such license becoming effective, and to the extent permissible under Applicable Law, Allogene shall use Commercially Reasonable Efforts to Manufacture, supply, and sell to Licensee and its Affiliates and Sublicensees, their reasonable requirements for Products pursuant to the Supply and Quality Agreements, and Licensee and its Affiliates and Sublicensees shall purchase Product exclusively from Allogene. [***].

2.2 No Reverse Engineering; Limits on Use. Licensee and its Affiliates shall not, by virtue of this Agreement or otherwise, and shall not willfully or knowingly permit any Person to, modify or reverse engineer or attempt to modify or reverse engineer any [***]. Licensee and its Affiliates shall not, and shall not willfully or Knowingly permit any Person to, use [***] beyond the scope of the rights granted under this Agreement.

2.3 Sublicense Rights.

(a) Right to Sublicense. Subject to the terms and conditions of this Agreement, Licensee shall have the right to grant sublicenses (but not further sublicense) under the license grant set forth in Section 2.1 to (i) an Affiliate of Licensee, or (ii) with Allogene's prior written consent (such consent not to be unreasonably delayed, conditioned or withheld), a Third Party with whom Licensee or its Affiliate has a binding written agreement to collaborate on the Development and Commercialization of the Products in the Field in the Licensee Territory. For avoidance of doubt, Allogene's consent shall not be required (and Sublicensees shall not be deemed to include) any Third Party engaged by Licensee or its Affiliates as a contract research organization ("***CRO***") or distributor. Licensee shall not transfer [***] to any Person (other than a permitted assignee of this Agreement, an Affiliate of Licensee, a Sublicensee in accordance with this Section 2.2(a), or a contract service provider in accordance herewith), without Allogene's prior written consent, which may be granted or withheld in Allogene's sole discretion.

(b) In addition, (i) Licensee can only grant sublicenses to a Third Party under the license granted to it with respect to the [***] in connection with the grant to such Third Party of one or more exclusive (as to the right, title and interest of Company and its Affiliates) licenses under the other intellectual property controlled by Licensee and its Affiliates with respect to the research, development or manufacture of one or more products, and Licensee shall provide notice to Allogene of the identity of any Person obtaining such a sublicense and (ii) Licensee can only grant sublicenses to a Third Party under the license granted to it with respect to the [***] in connection with the grant to such Third Party of one or more exclusive (as to the right, title and interest of Licensee and its Affiliates) licenses under the [***] with respect to the research, development or manufacture of one or more Products wherein such sublicensed [***], as

applicable, has an issued claim covering such Product(s), and Licensee shall provide notice to Licensor of the identity of any Person obtaining such a sublicense. Capitalized terms not otherwise defined in this clause (b) shall have the meaning set forth in Upstream License Agreement 3.

(c) Sublicense Terms. Any sublicense granted by Licensee under this Agreement shall be (i) in writing (ii) subject and subordinate to, and consistent with, the terms and conditions of this Agreement, and (iii) terminate immediately if the Licensee's rights under this Agreement terminate. It shall be a condition of any sublicense that the Sublicensee agrees to be bound by the terms of this Agreement applicable to Compounds and Products in the Field in the Licensee Territory. Licensee will be responsible for ensuring that the performance by any of its Sublicensees hereunder that are exercising rights under a sublicense hereunder is in accordance with the applicable terms of this Agreement. Licensee shall be responsible for any actions of its Sublicensees to the same extent as if such actions had been taken by Licensee itself, and Allogene shall have the right to proceed directly against Licensee without any obligation to first proceed against such Sublicensee; provided that, in the event of any material breach by any Third Party Sublicensee of any sublicense agreement entered into between such Sublicensee and Licensee that would be a material breach of this Agreement by Licensee, Licensee shall have the right to cure such material breach, including without limitation, by promptly terminating such sublicense agreement if such breach is not cured within [***] days of Licensee becoming aware of such breach. Within [***] days following the grant of any sublicense or any amendment thereto, Licensee shall provide Allogene with a complete, unredacted copy of any sublicense agreement entered into with a Sublicensee, and any amendment thereto, (provided that Licensee may redact any commercially sensitive economic terms or other terms contained therein that are not necessary to ascertain compliance with this Agreement). Licensee shall be liable for the failure of its Affiliates and Sublicensees to comply with the relevant obligations under this Agreement and shall, at its own cost, enforce compliance by its Affiliates and Sublicensees with the terms of the sublicense agreement.

(d) Restrictions. Licensee shall not grant a sublicense to any Third Party that has been debarred or disqualified by any Governmental Authority or is subject to any proceedings, sanctions or fines under any anti-corruption law. Licensee shall ensure that, prior to engaging any Third Party as a Sublicensee that such Third Party is subject to written agreements containing terms and conditions that: (i) require each such Sublicensee to protect and keep confidential any Confidential Information of the Parties, including in accordance with Article 9; (ii) do not impose any payment obligations or liability on Allogene; and (iii) are otherwise consistent with the terms of this Agreement. Licensee shall also use reasonable efforts to include in each sublicense agreement with a Third Party Sublicensee that Allogene have the right to conduct audits (either by itself or through Licensee or Licensee's designee) in accordance with the terms of Section 3.4(b), 4.8, 6.2(a), and 8.10.

(e) Activities Related to Subject Antibodies or Subject Antibody Materials Conducted by Licensee Affiliates. Licensee shall have the right to exercise its rights and perform any of its obligations under this Agreement through any number of Affiliates (but only for so long as such entity(ies) remain Affiliate(s) of Licensee) without obtaining

consent from Allogene; provided, however, that Licensee shall not provide any Affiliate of Licensee that is not a Wholly Owned Affiliate of Licensee with access to or possession of any [***] without Allogene's prior written consent, which may be granted or withheld in Allogene's sole discretion.

(f) Written Reports. Promptly following Allogene's request, which Allogene may make no more frequently than once each Calendar Year, Licensee shall provide Allogene with written reports specifying the following information, to the extent applicable and so requested by Allogene: (i) any Affiliates of Licensee exercising rights hereunder in accordance with Section 2.1; (ii) any currently effective sublicenses granted in accordance with Section 2.3, including the name and contact information of the Sublicensee and the date on which the sublicense was granted; and (iii) a list of any Products that have entered Clinical Trials.

2.4 Negative Covenants. Licensee hereby covenants not to practice, and not to permit or cause any Affiliate, Sublicensee or other Third Party to practice, any Allogene Technology for any purpose except as expressly authorized in this Agreement.

2.5 No Implied Licenses; Retained Rights. No right or license under any Patents or Information of either Party is granted or shall be granted by implication. All such rights or licenses are or shall be granted only as expressly provided in the terms of this Agreement. Allogene hereby expressly reserves all rights under the Allogene Technology not expressly licensed to Licensee in Section 2.1, including (i) all rights with respect to the Products outside the Field in the Licensee Territory, and (ii) all rights with respect to the Products both in and outside the Field in the Allogene Territory.

2.6 Grant-Back License to Allogene. Subject to the terms and conditions of this Agreement, Licensee hereby grants to Allogene an exclusive (even as to Licensee), fully paid, royalty-free license, with the right to sublicense through multiple tiers to any Affiliate of Allogene and Third Party, under the Licensee Technology, to (i) fulfill, either itself, its Affiliates or through subcontractors, its obligations under this Agreement, including its Manufacturing and supply obligations under Article 5, (ii) Manufacture the Product in the Licensee Territory solely for the purpose of the Development and Commercialization of the Product outside the Licensee Territory, provided that prior to the date that is [***] years after Licensee has commenced Manufacturing for the commercial supply of Products in the Licensee Territory, such right shall be subject to the Licensee's consent, not to be unreasonably withheld, conditioned, or delayed, and (iii) to Develop, use, make, have made, Manufacture, have Manufactured, import, export, sell, offer for sale, promote, market and distribute the Products, whether in or outside the Field, solely in the Allogene Territory. Except as otherwise provided herein, Allogene shall not engage, either directly or indirectly, via any of its Affiliates or in collaboration with any Third Party, in the research, Development, Manufacturing, Commercialization, or sale of Compounds or Products inside or outside the Field in the Licensee Territory.

2.7 Future Third Party In-License.

(a) If either Party becomes aware of any Patent or Know-How that is owned or controlled by a Third Party and is reasonably necessary or useful for the Development, Manufacture or Commercialization of the Product in the Field (such Patent or Know-How, "***Third Party IP***"), then such Party shall bring such matter to the attention of the other Party and the Parties shall discuss whether it is advisable for the Parties to obtain a license under Third Party IP for the Product in the Licensee Territory.

(b) As between the Parties, Allogene shall have the exclusive right (but not the obligation) to obtain a worldwide license under such Third Party IP for the Product; provided, Licensee shall have the right to review and, provide comments to terms that are specifically applicable to the Licensee Territory; and provided further, if Allogene fails to exercise such right promptly, then Licensee may seek to acquire such Third Party IP or obtain a license under such Third Party IP solely for Licensee's use only in the Licensee Territory. If Allogene (a) acquires such Third Party IP or (b) obtains such a worldwide license (each such acquisition or license, a "***Third Party IP License***"), such Third Party IP, to the extent falling within the definition of Allogene Technology, and to the extent Licensee desires to obtain the benefit of such Third Party IP License, shall be included in Allogene Technology and licensed or sublicensed to Licensee under the terms and conditions of this Agreement; provided however that Licensee shall be responsible for and reimburse Allogene for (i) [***] percent ([***]%) of the payments due to such Third Party under such Third Party IP License that are specific for the Licensee Territory (e.g., milestone payment for milestone events in the Licensee Territory or royalties on sales of the Product in the Licensee Territory); and (ii) [***] percent ([***]%) of the payments due to such Third Party under such Third Party IP License that are not specific for either Party's territory (e.g., upfront payment and license maintenance fee) (such costs in clauses (i) and (ii), collectively, the "***Third Party IP Costs***").

2.8 Existing Allogene In-Licenses. (A) All licenses and other rights granted to Licensee under this Article 2 (including any sublicense rights) are subject to the rights and obligations of Allogene under the Existing Allogene In-Licenses, including the field limitations and rights reserved to Third Parties, including grant back licenses to the licensors set forth therein. Licensee shall comply with, and shall require its Affiliates and Sublicensees to comply with, all applicable provisions of the Existing Allogene In-Licenses which are expressly set forth in the other provisions of this Agreement in order to allow Allogene to comply with its obligations under any Existing Allogene In-License including relating to sublicensing, patent matters, confidentiality, reporting, audit rights, indemnification and diligence, in each case, to the extent that Licensee is provided a copy of such Existing Allogene In-Licenses. Without limiting the foregoing, Licensee will [***]. in each case, sufficiently in advance to enable Allogene to comply with its obligations under the Existing Allogene In-Licenses. For clarity, Upstream License 1 applies to the [***] and, upon written notice from Allogene, the [***]. (B) During the Term, Allogene shall not terminate any Existing Allogene In-License, or take (or fail to take) any action that would reasonably be expected to (i) permit the Upstream Licensor to terminate the Existing Allogene In-License or (ii) other than with respect to actions that could invoke Section 4.5 of Upstream License 2, adversely affect any of Licensee's exclusive rights under this Agreement or any Existing License Agreement.

2.9 Bundled Products. Notwithstanding any other provision of this Agreement, for purposes of the license grant under Section 2.1 with respect to any Product that is a Bundled Product, such license will only include a license with respect to the Product component of such Bundled Product.

2.10 Non-Compete. During the Term, Licensee shall not engage, either directly or indirectly, via any of its controlled Affiliates (i.e., subsidiaries) or in collaboration with a Third Party, in the research, Development, Commercialization, Manufacturing or sale of [***] or otherwise engage in the exploitation of [***] outside the Products, without Allogene's written consent.

2.11 647 Product. Licensee shall utilize 647 Product as part of the lymphodepletion regimen for the Development and Commercialization of the Products unless otherwise agreed by Allogene. Without Allogene's prior written consent, Licensee's Development, use or Commercialization of any Product without the use of the 647 Product as part of the regimen shall constitute a material breach of this Agreement. The Parties shall mutually agree on a supply and quality agreement for 647 Product as further described in Section 5.2.

Article 3
Development

3.1 Overview; Diligence. Licensee shall be solely responsible, at its own costs and expense, for the Development of the Products in the Field in the Licensee Territory. Licensee shall use Commercially Reasonable Efforts to (i) Develop each Product in the Field in the Licensee Territory in accordance with the Development Plan (including the timeline set forth therein); (ii) perform the Development activities in compliance with Applicable Law, including GCP and cGMP; and (iii) obtain and maintain Regulatory Approvals for the Products in each jurisdiction in the Licensee Territory. Failure to use Commercially Reasonable Efforts to meet the foregoing obligations shall constitute a material breach of Licensee, which shall entitle Allogene to terminate this Agreement with respect to the applicable Product in accordance with and subject to the provisions of Section 12.2(a). Licensee will notify the JSC if it reasonably determines that, notwithstanding its Commercially Reasonable Efforts, any milestone or other requirement under the then current Development Plan will unlikely be achieved by Licensee in connection with Developing the Products, whether because of changes in scientific, business, market, or other conditions, in each case outside of its reasonable control. After such notice, the JSC shall promptly meet, discuss and consider in good faith appropriate modifications to the Development Plan in light of the changed circumstances.

3.2 Development Plan. (a) Within [***] months after the Effective Date, the Parties shall mutually agree to an initial plan for the Development of the [***] in the Field in the Licensee Territory, and (b) within [***] months after the completion of the dose-escalation stage of a Clinical Trial of the [***], the Parties shall mutually agree to an initial plan for the Development of the applicable Product in the Field in the Licensee Territory (each such plan and any subsequent updates pursuant to this Section 3.2, collectively the ***"Development Plan"***). The

Development Plan shall set forth with reasonable details, *inter alia*, the scope and budget of the collaboration, and the Development activities to be conducted by or on behalf of Licensee in order to obtain Regulatory Approvals for the applicable Products in the Field in the Licensee Territory, including (i) the non-clinical and clinical trials as part of the Development activities relating to the applicable Products and (ii) the timeline for filing MAAs for the applicable Products for any currently proposed indication in the Field in each region within the Licensee Territory. After the Effective Date, either Party may propose to the JSC and the other Party revisions to the Development Plan, and the JSC may from time-to-time amend the Development Plan. Any and all updates to the Development Plan must be approved by the JSC.

3.3 Global Development Collaborations.

(a) Global Development Plan. Allogene shall keep the JSC promptly informed on its plans (and any changes to its plans) for the global Development of each Product in sufficient detail for Licensee to evaluate and consider in good faith changes that would be necessary to conform the Development of the applicable Product in the Field in the Licensee Territory to Allogene's global development plan (the "***Global Development Plan***"). Except as expressly agreed by Allogene in writing or to the extent required by the applicable Regulatory Authority or to address specific operational requirements in the Licensee Territory, Licensee shall use its reasonable best efforts to ensure that Licensee's Development Plan, including the study protocols and the Development of the Products in the Field in the Licensee Territory shall all be in full conformance with the material aspects of the Global Development Plan.

(b) The Parties shall reasonably collaborate with respect to the Development of the Product across their territories. Allogene shall have the right to conduct Clinical Trials designed to obtain and maintain Regulatory Approval of the Product in multiple countries and jurisdictions through the conduct of Clinical Trials in multiple sites in such countries and jurisdictions as part of one unified Clinical Trial or separately but concurrently in accordance with a common Clinical Trial protocol (such Clinical Trial, a "***Multi-Region Trial***"), which may or may not include the Licensee Territory. If Allogene decides to conduct a Multi-Region Trial for the Product that includes the Licensee Territory, Allogene shall be the sole sponsor of such Multi-Region Trial, the Parties shall mutually agree on the CRO that will conduct the Multi-Region Trial in the Licensee Territory, and Licensee shall be responsible for [***] percent ([***]%) of all costs incurred from conducting Multi-Region Trials in the Licensee Territory, including the cost of clinical sites and trials in the Licensee Territory.

(c) If the Parties agree to conduct any Multi-Region Trial for the Product including the Licensee Territory, Allogene shall have the right to control the design and protocol for any global Clinical Trial of the Product and shall offer Licensee the opportunity to provide input regarding clinical study design, reasonably anticipated timeline and conduct of the relevant clinical trials of the Product in the Field in the Licensee Territory, all of which shall be reasonably considered by Allogene.

3.4 Clinical Trial Audit Rights.

(a) Clinical Trials. Licensee shall conduct all Clinical Trial of the Products in compliance with all Applicable Laws, including GCP and regulations promulgated by the NMPA and FDA.

(b) Conduct of Audits. Upon [***] Business Days' prior written notification by Allogene but no more frequent than once per [***] (except in the event that Allogene has reasonable cause), and based on an audit scope agreed upon by the Parties, Allogene or its representatives may conduct, at its sole cost and expense, an audit of Licensee or its Affiliates and all Clinical Trial sites engaged by Licensee or its Affiliates to perform Licensee's obligations under the Development Plan, in each case, to ensure that the applicable Clinical Trials are conducted in compliance with the Development Plan, GCP, and Applicable Laws; provided that in the event any such audit of Licensee's Clinical Trial sites engaged by Licensee or its Affiliates requires Licensee's assistance, Licensee shall provide Allogene or its representatives with such assistance at Licensee's cost, to the extent reasonable, including providing personnel of Licensee to be present for such audit and producing any documents or authorizations allowing Allogene or its representatives to conduct such audit, to the extent reasonable. No later than [***] days after the completion of such audit, Allogene shall provide Licensee with a written summary of Allogene's findings of any deficiencies or other areas of remediation that Allogene identifies during any such audit and the Parties shall promptly meet to discuss any such deficiencies or other areas of remediation identified by Allogene. Licensee shall use Commercially Reasonable Efforts to respond or remediate any such deficiencies promptly following Allogene's receipt of such report.

(c) Third Party Agreements. Licensee shall include provisions granting Allogene the right to conduct audits set forth in Section 3.4(b) in Licensee's agreements with (i) any Third Party related to the conduct of Clinical Trials, and (ii) any Sublicensees.

3.5 Records. Licensee shall maintain appropriate records in either tangible or electronic form of (a) all significant Development activities conducted by it or on its behalf related to a Product; and (b) all significant information generated by it or on its behalf in connection with the Development of a Product, including, without limitation, all Clinical Trial data and records, in each case in accordance with its usual documentation and record retention practices. Such records shall be in sufficient detail to properly reflect, in a good scientific manner, all significant work done, and the results of studies and trials undertaken and, further, shall be at a level of detail appropriate for patent and regulatory purposes. Licensee shall document all non-clinical studies and Clinical Trials in formal written study reports according to Applicable Laws and national and international guidelines. Upon Allogene's reasonable request, Licensee shall, and shall cause its Affiliates and Sublicensees, to provide to Allogene copies of such records, including, at Allogene's cost and expense, certified translated copies of such records. All such records, reports, information and data provided shall be subject to the confidentiality provisions of Article 9.

3.6 Development Reports. Licensee shall keep Allogene (by reporting through the JSC) reasonably informed of the progress and results of its and its Affiliates' and their respective sublicensees' work under the Development Plan (including prompt reporting of available pre-

clinical and any available and aggregated clinical data collected and cleaned pursuant to Licensee's development plans). Without limiting the generality of the foregoing, at each regularly scheduled JSC meeting, Licensee shall provide the JSC with a written report summarizing the Development activities performed since the last JSC meeting and the results thereof, and comparing such activities with the Development Plan for such time period at least [***] Business Days prior to the scheduled JSC meeting. Such reports shall be provided in English and at a level of detail reasonably requested by the JSC and sufficient to enable the JSC to determine Licensee's compliance with its diligence obligations under Section 3.1. At such JSC meeting, the JSC members shall discuss the status, progress and results of Licensee's Development activities. Licensee shall promptly respond to the JSC's reasonable questions or requests for additional information relating to such Development activities. No later than [***] days after each anniversary of the Effective Date, Licensee shall provide the JSC with a detailed written report in English regarding the progress under the Development Plan and results thereof.

3.7 Subcontractors. Licensee shall have the right to engage subcontractors to conduct any activities necessary for Development of the Products under this Agreement, provided that Licensee shall (a) provide written notice to Allogene no less [***] days prior to engaging any such subcontractors, and (b) ensure such subcontractors are bound by written obligations of confidentiality and non-use consistent with this Agreement and have agreed in writing to assign to Licensee all Data, Know-How, Inventions or other intellectual property generated by such subcontractor in the course of performing such subcontracted work. Licensee shall remain responsible for any obligations that have been delegated or subcontracted to any subcontractor, and shall be responsible for the performance of its subcontractors. Notwithstanding the foregoing, no Third Party subcontractor may obtain rights under [***].

3.8 Transfer of Allogene Know-How. Within [***] days after the Effective Date, Allogene shall initiate transfer to Licensee, at Allogene's sole cost and expense, all Allogene Know-How (other than Know-How related to Manufacturing) in Allogene's possession that is necessary or reasonably useful for the Development of the [***] in the Licensee Territory by providing copies or samples of relevant documentation and Data of such Allogene Know-How, including data within reports, and electronic files, that exists on the Effective Date (the "**Initial Know-How Transfer**"), which Initial Know-How Transfer shall occur in a manner and following a reasonable schedule established by the JSC. During the Term, Allogene shall (a) within [***] days of an IND filing relating to the [***], transfer to Licensee, at Allogene's sole cost and expense, all Allogene Know-How (other than Know-How related to Manufacturing) in Allogene's possession that is necessary or reasonably useful for the Development of the applicable Product in the Licensee Territory, (b) provide Licensee with additional Allogene Know-How related to any Compound or Product, to the extent such Allogene Know-How comes to Allogene's attention (or are reasonably requested by Licensee) and have not previously been provided to Licensee, to the extent necessary or reasonably useful for Licensee to exercise its rights or perform its obligations under this Agreement, (c) provide Licensee with reasonable access to Allogene personnel involved in the Development of Products, either in-person at Allogene's facility or by teleconference, to the extent necessary to effect such technology transfer (the "**Continuing Know-How Transfer**," and together with the Initial Know-How Transfer, the "**Know-How Transfer**"), and (d) promptly deliver to Licensee an updated version of Schedule 1.13 to reflect

additional Patents that are included in the Allogene Patents (including without limitation, Allogene Invention Patents and Patents which no longer qualify as Acquiror IP). For clarity, Allogene's failure to transfer any Allogene Know-How or to deliver any updated version of Schedule 1.13 as required hereunder shall not affect Licensee's exclusive rights and licenses to use such Know-How or practice such Patents in the Licensee Territory pursuant to this Agreement. The Parties agree and acknowledge that the Initial Know-How Transfer shall be the materials listed on Schedule 3.8. Notwithstanding anything contained herein to the contrary, the foregoing Know-How Transfer shall not include any transfer of Manufacturing technology with respect to a Product, which shall be initiated in accordance with Section 5.3(b).

3.9 Material Transfer. With respect to any biopharmaceutical, biological or chemical material (including without limitation, Regulatory Materials, the "**Transferred Material**") that Allogene will transfer to Licensee for use pursuant to this Agreement, such transfer shall take place in accordance with the following provisions

(a) Transferred Materials and related information provided by Allogene shall, as between the Parties, remain the property of Allogene and shall be kept securely by Licensee and shall not be provided by Licensee to any Third Party (other than Affiliates, permitted Sublicensees, contractors, and Regulatory Authorities in the Licensee Territory) without the prior written consent of Allogene.

(b) Licensee shall only use the Transferred Material pursuant to this Agreement and use the Transferred Materials in accordance with all Applicable Laws, regulations and governmental guidelines.

(c) Licensee shall not use the Transferred Material in any human subjects without Allogene's prior written consent.

(d) Licensee shall not provide any of the Transferred Material to any Third Party (other than Regulatory Authorities in the Licensee Territory or as otherwise permitted under Section 3.9(a)) without Allogene's prior written consent, and Licensee shall endeavor in good faith to ensure that such permitted Third Party comply with the same restrictions as set forth in this Section 3.9, and Licensee shall be responsible for the breach by any such Third Party of any of the terms of this Agreement as if such breach were a breach by Licensee.

(e) Licensee acknowledges that the Transferred Material is experimental in nature and provided "as is" and that Allogene makes no representation or extends no warranty of any kind with respect to the Transferred Material and hereby disclaims all warranties, either express or implied, including, but not limited to, any warranty of merchantability, fitness for a particular purpose or that their use does not or shall not infringe any patent rights of third parties.

(f) Licensee shall use the Transferred Material at its own risk and shall comply with any safety instructions provided by Allogene.

(g) Licensee shall, at the election of Allogene following completion of the purpose for which the Transferred Material was transferred, destroy or return the Transferred Material, other than Transferred Material which has been delivered to Regulatory Authorities.

(h) The Transferred Materials shall be identical to those used for the purposes of Product Development, Manufacturing, marketing authorization and Commercialization by Allogene and its Affiliates and licensees in the Allogene Territory, other than Transferred Materials consisting of cellular materials and biological samples, in which case such Transferred Materials shall meet the specifications as agreed to by the Parties in writing.

For clarity, this Section 3.9 shall not apply to any clinical and/or commercial supply to be provided by Allogene to Licensee in accordance with Article 5.

Article 4
Regulatory

4.1 Conduct of Regulatory Activities. Licensee (itself and through its Affiliates and Sublicensees, as applicable) shall be solely responsible for the expenses and costs of all regulatory activities with respect to the Products in the Field in the Licensee Territory. Under the oversight of the JSC, Licensee shall implement the regulatory strategy formulated and adopted by the JSC and prepare, file, obtain and maintain Regulatory Approvals for the Products in the Field in the Licensee Territory, shall be the holder of all Regulatory Approvals for the Products in the Field in the Licensee Territory, and shall have responsibility for interactions with Regulatory Authorities with respect to the Products in the Field in the Licensee Territory; provided however that if Applicable Laws in the Licensee Territory do not allow Licensee to hold Regulatory Approvals for any Product in the Licensee Territory, then during the Term Allogene shall hold such Regulatory Approval for Licensee's benefit, shall appoint Licensee or one of its Affiliates as its exclusive agent to handle all regulatory activities for such Product in the Licensee Territory, and shall promptly transfer such Regulatory Approval to Licensee or its designee when allowed by Applicable Laws; provided that in the event and during any period that Allogene holds such Regulatory Approval for Licensee's benefit, (i) Allogene shall not be obligated to perform any activities, bear any obligations, or bear any costs, in each case, in addition to the activities set forth in this Agreement due to Allogene or its Affiliate holding such Regulatory Approval; (ii) Allogene shall not assume any liability in connection with Allogene holding such Regulatory Approval; (iii) should Allogene incur any costs or expenses related to holding or transferring any such Regulatory Approval, Licensee shall reimburse Allogene or its Affiliates for any and all costs and expenses incurred by or on behalf of Allogene in holding or transferring such Regulatory Approval; and (iv) Licensee shall indemnify and hold Allogene Indemnitees (as defined herein) from and against all Losses to the extent arising from Allogene holding such Regulatory Approval in the Licensee Territory as set forth in Article 13. Notwithstanding anything in this Agreement to the contrary, Licensee may not modify the study protocol, use or indication of a Product without the JSC's prior written approval. The Parties acknowledge and agree that importation of final Products to the Licensee Territory would reduce cost and time to Regulatory Approvals. The Parties shall cooperate in good faith to explore importation of final

Products to the Licensee Territory prior to Product approval. To fulfill the regulatory requirements for regulatory filings in the Licensee Territory, Allogene shall use Commercially Reasonable Efforts to provide the relevant certification documents or illustration statement with notarization and/or legalization within a reasonable timeline.

4.2 Review of Regulatory Documents. Licensee shall keep Allogene regularly and fully informed of the preparation and Regulatory Authority review and approval of submissions and communications with Regulatory Authorities with respect to the Products in the Field in the Licensee Territory. Licensee shall provide to Allogene drafts of any material Regulatory Documents in the Licensee Territory for the Products no later than [***] days prior to the planned submission (or promptly following Licensee's receipt of such Regulatory Documents, as applicable). Licensee shall consider in good faith any comments received from Allogene on such Regulatory Documents provided that such comments are received at least [***] Days prior to the planned submission due date. In addition, Licensee shall notify Allogene of any material Regulatory Documents for the Products and any other material documents, comments or other correspondences related thereto submitted to or received from any Regulatory Authority in the Licensee Territory and shall provide Allogene with electronic copies thereof as soon as reasonably practicable, but in all events within [***] days after submission or receipt thereof or sooner if required by the Pharmacovigilance Agreement (as defined below). If any such Regulatory Document is material and is not in English, then, at Allogene's request and expense, Licensee shall also endeavor in good faith to provide Allogene with a written English translation within the corresponding timelines as set forth in this Article 4 (or, with respect to any such Regulatory Document that is large, such additional period of time as may be reasonably necessary for Licensee to obtain such translation or to provide a summary in English).

4.3 Copies of Regulatory Correspondence. Licensee shall notify Allogene of any comments or other correspondence regarding any Regulatory Documents that are received from any Regulatory Authority in the Licensee Territory and shall provide Allogene with copies thereof as soon as practicable, but in all events within [***] Days of receipt (or, with respect to any such finding, notice, or report that is large, such additional period of time as may be reasonably necessary for Licensee to obtain such translation or to provide a summary in English).

4.4 Notice of Meetings. Licensee shall provide Allogene with notice of any meeting or discussion with any Regulatory Authority in the Licensee Territory related to any Product no later than [***] Days after receiving notice thereof. Licensee shall lead any such meeting or discussion and Allogene or its designee shall have the right, but not the obligation, to attend and participate in any such meeting or discussion at Allogene's or its designee's expense unless prohibited or restricted by Applicable Law or Regulatory Authority. At Licensee's request, Allogene shall reasonably cooperate with Licensee in preparing for any such meeting or discussion. If Allogene elects not to attend such meeting or discussion, then Licensee shall provide to Allogene a written summary thereof in English promptly following such meeting or discussion.

4.5 Notice of Regulatory Action. If any Regulatory Authority takes or gives notice of its intent to take any regulatory action with respect to any activity of Licensee or Allogene

relating to any Product, then Licensee or Allogene (as the case may be) shall notify the other Party of such contact, inspection, or notice or action within [***] after receipt of such notice (or, if action is taken without notice, within [***] of Licensee or Allogene (as the case may be) becoming aware of such action). Allogene shall have the right to review and comment on any other responses by Licensee to any such action of a Regulatory Authority that pertain to a Product in the Licensee Territory.

4.6 Access to Regulatory Documents and Data. Allogene hereby grants to Licensee (and its Affiliates and Sublicensees, as applicable) the right to access and cross-reference filings made by Allogene or its Affiliates with Regulatory Authorities and regulatory filings relating to the Products, including the Data included in such filings, solely to the extent necessary for seeking, obtaining and maintaining Regulatory Approvals of the Products in the Field in the Licensee Territory. Licensee hereby grants to Allogene and its Affiliates and licensees the right to access and cross-reference filings made by Licensee and its Affiliates and Sublicensees with Regulatory Authorities and regulatory filings relating to the Products, including the Data included in such filings and all corresponding communications with the Regulatory Authorities for any regulatory inquiries or actions taken by the Regulatory Authorities in the Allogene Territory. Licensee may use such right of reference to Allogene's regulatory filings in the Field solely for the purpose of seeking, obtaining and maintaining Regulatory Approval of the Products in Field in the Licensee Territory. Allogene may use the right of reference to Licensee's regulatory filings solely for the purpose of seeking, obtaining and maintaining Regulatory Approval of the Products outside or within the Field in the Allogene Territory. Each Party shall, promptly upon request of the other Party, file with applicable Regulatory Authorities such letters of access or cross-reference as may be necessary to accomplish the intent of this Section 4.6. If any approval or filing is required by Applicable Law for a Party to share any materials abovementioned in this Section 4.6 with the other Party, the other Party shall use Commercially Reasonable Efforts to obtain such approval or filing at its sole costs and expense. Notwithstanding the foregoing, (A) neither Party shall be obligated to share any personally identifiable information with the other Party, unless reasonably required for such other Party to Develop the Products in its respective territory and such sharing is permitted by, and in accordance with, the Applicable Laws, including applicable data privacy laws, in which case the Parties shall enter into a separate agreement to address such exchange of personally identifiable information between the Parties, and (B) each Party shall only be obligated to share Data on an as-is basis in the then current format.

4.7 Safety Data Exchange. Prior to the Initiation of any Clinical Trial of a Product in the Licensee Territory, the Parties shall negotiate in good faith and enter into a safety data exchange agreement (the "***Pharmacovigilance Agreement***") regarding the relevant Compound and Product, which shall set forth standard operating procedures governing the collection, investigation, reporting, and exchange of information concerning adverse drug reactions/experiences sufficient to permit each Party to comply with its regulatory and other legal obligations within the applicable timeframes. Such safety data exchange agreement shall identify which Party shall be responsible for the timely reporting of all relevant adverse drug reactions/experiences, product quality, product complaints and safety data relating to the Compound and Product to the appropriate Regulatory Authorities in the Licensee Territory in accordance with all

Applicable Laws. Such agreement shall allow each Party to comply with all regulatory and legal requirements regarding the management of safety data by providing for the exchange of relevant information in the appropriate format within applicable timeframes. Unless otherwise mutually agreed by the Parties, Allogene shall maintain a global safety database for the Compound and Products, and Licensee shall provide all such assistance as Allogene may from time to time require in connection therewith. Licensee may establish and maintain a local safety database to store the safety information generated from the development of the Compounds and Products in the Licensee Territory and to assure regulatory reporting compliance in the Licensee Territory.

4.8 Safety and Regulatory Audits. Upon reasonable notification (but not less than [***] days), Allogene shall be entitled to conduct an audit of safety and regulatory systems, procedures and practices of Licensee, including on-site evaluations to the extent permitting such on-site evaluations is in the control of Licensee. With respect to any inspection of Licensee or its Affiliates or Sublicensees (including Clinical Trial sites) by any Governmental Authority relating to any Product, Licensee shall notify Allogene of such inspection (a) no later than [***] Business Day after Licensee receives notice of such inspection or (b) within [***] Business Day after the completion of any such inspection of which Licensee did not receive prior notice. Licensee shall promptly provide Allogene with all information in Licensee's control related to any such inspection. Licensee shall also permit Governmental Authorities outside of the Licensee Territory to conduct inspections of Licensee or its Affiliates or Sublicensees (including Clinical Trial sites) relating to the Product, and shall ensure that all such Affiliates or Sublicensees permit such inspections. Allogene shall have the right, but not the obligation (unless required by Applicable Law or any Governmental Authority), to be present at any such inspection at its sole cost and expense. Following any such regulatory inspection related to the Products, Licensee shall provide Allogene with (i) an unredacted copy of any finding, notice, or report provided by any Governmental Authority related to such inspection (to the extent related to the Product) within [***] Business Days of Licensee receiving the same, and (ii) in the event that such findings, notice, or report is in a language other than English, a written English translation of any such finding, notice, or report of a Governmental Authority related to such inspection (to the extent related to the Product) within [***] Business Days after receiving the same (or, with respect to any such finding, notice, or report that is large, such additional period of time as may be reasonably necessary for Licensee to obtain such translation or provide such information in another format reasonably agreed by the Parties). Further details including notification, timing, response and scope of such audits shall be included in the Pharmacovigilance Agreement.

4.9 Regulatory Inspection. Licensee shall promptly notify Allogene of any inspection of Licensee, its Affiliates, Sublicensees or subcontractors, product manufacture sites and Clinical Trial sites which are out of the Licensee Territory from any Regulatory Authority relating to the Products or the sites which provide intermediates or excipients or packaging materials to Licensee, and shall provide Allogene with all information pertinent thereto (including all copies of all notices, filings and correspondences received from or submitted to the Regulatory Authority in connection therewith). Allogene shall have the right, but not the obligation, to be present at any such inspection in the Licensee Territory; provided, however, Allogene shall be responsible for the preparation and conduct of any inspections of manufacturing sites or Clinical Trial sites outside the Licensee Territory.

4.10 No Harmful Actions. If Allogene believes that the Licensee is taking or intends to take any action with respect to a Product that could have a material adverse impact upon the regulatory status of the Product in the Allogene Territory, Allogene shall have the right to bring the matter to the attention of the JSC and the Parties shall discuss in good faith to resolve such concern. Without limiting the foregoing, unless the Parties otherwise agree: (a) neither Party shall communicate with any Regulatory Authority having jurisdiction outside of its respective territory, unless so ordered by such Regulatory Authority, in which case such Party shall immediately notify the other Party of such order; and (b) neither Party shall submit any Regulatory Documents or seek Regulatory Approvals for the Product outside of its respective territory, notify the other Party of any information it receives regarding any threatened or pending action, inspection or communication by any Third Party, which would reasonably be expected to affect the safety or efficacy claims of any Product or the continued marketing of any Product (as to Allogene's notification obligation, only to the extent it would reasonably be expected to affect the Licensee Territory). Upon receipt of such information, the Parties shall consult with each other in an effort to arrive at a mutually acceptable procedure for taking appropriate action with respect to the Licensee Territory, subject to Section 7.1(b).

4.11 Remedial Actions. Each Party shall notify the other immediately, and promptly confirm such notice in writing, if it obtains information indicating that any Product may be subject to any recall, corrective action or other regulatory action by any Governmental Authority or Regulatory Authority (as to Allogene's notification obligation, only to the extent it would reasonably be expected to affect the Licensee Territory) (a "***Remedial Action***"). The Parties shall assist each other in gathering and evaluating such information as is necessary to determine the necessity of conducting a Remedial Action with respect to the Licensee Territory. Licensee shall bear any all costs and expenses related to any Remedial Action in the Licensee Territory and shall have sole discretion with respect to any matters relating to any Remedial Action in the Licensee Territory, including the decision to commence such Remedial Action and the control over such Remedial Action. Each Party shall, and shall ensure that its Affiliates and sublicensees shall, maintain adequate records to permit the Parties to trace the distribution and use of the Product in the Licensee Territory.

4.12 Territory Issues. The Parties acknowledge and agree that, as of the Effective Date, the qualifications, rights, obligations, and other requirements related to applying for, obtaining, and maintaining Regulatory Approval to Develop, Manufacture, and Commercialize the Compounds and Products in the Licensee Territory and to enforce the Allogene Technology in the Licensee Territory, are relatively new, undefined, incomplete, and/or otherwise uncertain. Accordingly, at Licensee's cost and expense, Allogene agrees to provide reasonable cooperation as may be necessary for Licensee or an Affiliate of Licensee (including without limitation, any Affiliate that may be classified by Regulatory Authorities as a wholly foreign-owned enterprise ("***WFOE***")), to be or act as the marketing authorization holder for the Products in the Licensee Territory ("***MAH***"), to otherwise receive all of the benefits of being the MAH, and/or to enforce the Allogene Technology in the Licensee Territory.

Article 5
Supply and Manufacturing

5.1 Clinical Supply of Products in the Licensee Territory. On a Product-by-Product basis, within [***] days prior to the anticipated IND submission with respect to such Product in the Licensee Territory, the Parties shall enter into a clinical supply agreement (the "***Clinical Supply Agreement***") pursuant to which Allogene shall supply such Product to the extent such Product and 647 Product is to be imported into the Licensee Territory for a Clinical Trial, to Licensee for clinical use and/or other JSC-approved Development purposes in the Licensee Territory at [***], as well as FTE cost for any services in direct support of such supply or FTE or other costs to investigate or comply with GMP specific to the Licensee Territory and that are not otherwise part of then-current standards, practices and procedures for good manufacturing practices in the United States (collectively, the "***Supply Price***"). Subject to the terms of this Article 5, the Clinical Supply Agreement, Allogene shall, itself or through one or more CMOs, use Commercially Reasonable Efforts to supply Product to Licensee EXW (Incoterms 2010) from Allogene (or its CMO) manufacturing facility for a specified term. The Parties shall use Commercially Reasonable Efforts to enter into a quality agreement (the "***Clinical Quality Agreement***") in connection with the Clinical Supply Agreement within [***] days of the execution of the Clinical Supply Agreement.

5.2 Commercial Supply of 647 Product in the Licensee Territory. Within [***] following BLA submission with respect to a Product, the Parties shall negotiate a commercial supply agreement and quality agreement pursuant to which Allogene shall supply such 647 Product to Licensee for commercial use in the Licensee Territory at the Supply Price (collectively, the "***647 Commercial Supply and Quality Agreement***").

5.3 Commercial Manufacture and Supply in the Licensee Territory.

(a) On a Product-by-Product basis, from and after the completion of the Manufacturing Technology Transfer with respect to such Product, Licensee will be solely responsible for, and will bear all the costs and expenses of, Manufacturing, or having Manufactured, Compound and Products for Development and Commercialization in the Field in the Licensee Territory.

(b) On a Product-by-Product basis, after [***], the Parties will jointly prepare and agree on a Manufacturing technology transfer plan. Allogene will provide technical transfer assistance pursuant to such plan; provided that Licensee shall pay for the costs of the technical transfer, including material costs and FTE costs of Allogene, in each case, in accordance with such technology transfer plan; provided that Allogene will provide technical transfer support of the equivalent of [***] FTE hours in the aggregate as partial consideration of the upfront payment made under this Agreement. Any technical, manufacturing, quality, supply chain or related support provided by Allogene pursuant to Licensee's express request and prior to the manufacturing technology transfer shall also count against such [***] FTE hours threshold.

(c) Notwithstanding the foregoing, upon Licensee's request, the Parties shall discuss the feasibility for the commercial supply of Products by Allogene or its CMO for import

into the Licensee Territory to satisfy Licensee's requirements in connection with Commercializing the Products ("***Other Commercial Supply and Quality Agreements***").

5.4 Supply and Quality Agreements. Notwithstanding anything to the contrary in this Article 5, the Parties shall enter into Supply and Quality Agreements only if and to the extent permitted by Applicable Laws in the Licensee Territory. The Supply and Quality Agreements shall be consistent with the terms and conditions of this Agreement and shall include Licensee's good faith forecast and related commitments from time to time of its and its Affiliates' and Sublicensees' requirements for the Products. The Supply and Quality Agreements shall also include, among other things, comprehensive and commercially reasonable terms regarding: allocation of Products (and/or supplemental Manufacturing arrangements) if supply becomes constrained; Allogene's commitments regarding compliance with Applicable Laws in the Licensee Territory related to the manufacture and quality of the Products (including Product registration specifications, manufacturing and testing protocols, and monograph requirements); Licensee or its designee's right to inspect and audit the sites where Products are Manufactured and to audit Supply Prices; change controls related to Products and labeling; the supply to Licensee of Regulatory Materials; and the provision by Allogene of reasonable cooperation, information, and assistance with any inspection of Allogene, its Affiliates, sublicensees or subcontractors within the Allogene Territory (including without limitation, Clinical Trial and Manufacturing sites) that may be requested by any Regulatory Authority inside the Licensee Territory and cost reimbursement for same.

Article 6
Commercialization.

6.1 Responsibilities

. Subject to the terms and conditions of this Agreement (including the diligence obligations set forth below), Licensee (itself and through its Affiliates and Sublicensees, as applicable) shall be solely responsible for all aspects of the Commercialization of the Products in the Field in the Licensee Territory, including: (a) developing and executing a commercial launch and pre-launch plan (the "***Commercialization Plan***"), (b) negotiating with applicable Governmental Authorities regarding the price and reimbursement statuses of the Products; provided that Licensee agrees to evaluate and consider in good faith Allogene's concerns about Product pricing in the Licensee Territory in relation to the price of the relevant Product sold in the U.S.; (c) marketing, advertising and promotion; (d) booking sales and distribution and performance of related services; (e) handling all aspects of order processing, invoicing and collection, inventory and receivables; (f) providing customer support, including handling medical queries, and performing other related functions; and (g) conforming its practices and procedures to Applicable Laws relating to the marketing, detailing and promotion of the Products in the Field in the Licensee Territory. Licensee shall bear all of the costs and expenses incurred in connection with such Commercialization activities. Licensee shall use Commercially Reasonable Efforts to Commercialize the Products in the Licensee Territory after Regulatory Approval for such Product is received and to expand annual Net Sales of the Products in the Licensee Territory.

6.2 Compliance with Applicable Laws.

(a) Licensee shall conduct, and shall cause its Affiliates and Sublicensees to conduct all activities assigned to it under the Development Plan or with respect to the Products in the Field in and for the Licensee Territory in compliance with all Applicable Laws (including all applicable data privacy laws, anti-bribery and anti-corruption laws), all applicable national and international guidelines (including GCP, GMP, GLP, all applicable ICH guidelines and other good scientific, laboratory, manufacturing and clinical practices under the Applicable Laws of the region in which such activities are conducted), and any Regulatory Authority and Governmental Authority health care programs having jurisdiction in such Party's respective territory, each as may be amended from time to time. Licensee shall ensure that its Affiliates and Sublicensees do not transfer or divert the Compound or Product to an entity other than Licensee, or an entity approved by Licensee, in each case in a manner that would cause the sale of such Compound or Product in the chain of distribution (from Licensee or its Affiliates or Sublicensees to the end user) to be excluded (except as an exception provided in the Net Sales definition) in the calculation of Net Sales, provided that for each unit of the Compound or Product, the inclusion of such sales in the calculation of Net Sales shall occur only once. Upon reasonable notification, Allogene shall have the rights to conduct audits (but not more than once per Calendar Year, unless for cause) of Licensee to ensure (i) compliance with applicable cGMP, GCP, GLP, and GSP standards, including on-site evaluations (to the extent permitting such evaluations is under the control of the audited Party), and (ii) compliance with this Section 6.2.

(b) Third Party Agreements. Licensee will use Commercially Reasonable Efforts to include provisions granting Allogene the right to conduct the audits set forth in Section 6.2(a) in Licensee's agreements with its Sublicensees.

6.3 Commercialization Diligence. Licensee shall be solely responsible for, and use Commercially Reasonable Efforts to Commercialize Products in the Field in the Licensee Territory in accordance with the Commercialization Plan, at its sole cost and expense. For each Product that receives Regulatory Approval in a jurisdiction in the Licensee Territory, Licensee shall use Commercially Reasonable Efforts to consummate the First Commercial Sale of such Product in such jurisdiction within [***] months after receipt of such Regulatory Approval. Failure to use Commercially Reasonable Efforts to meet the diligence obligations set forth in this Section in accordance with the applicable timeline shall constitute a material breach of Licensee such that Allogene may terminate this Agreement with respect to the relevant Product in accordance with and subject to the provisions of Section 12.2(a). Licensee will notify the JSC if it reasonably determines that, notwithstanding its Commercially Reasonable Efforts, any milestone or other requirement under the then current Commercialization Plan will unlikely be achieved by Licensee in connection with Commercializing the Products, whether because of changes in scientific, business, market, or other conditions, in each case outside of its reasonable control. After such notice, the JSC shall promptly meet, discuss and consider in good faith appropriate modifications to the Commercialization Plan in light of the changed circumstances.

6.4 Commercialization Plan. The Commercialization Plan shall contain in reasonable detail the major Commercialization activities and the timelines for achieving such

activities, including marketing efforts for the Product. Licensee shall deliver an initial Commercialization Plan to the JSC for review and discussion no later than [***] months prior to the anticipated date of the first Regulatory Approval for a Product in the Licensee Territory. Thereafter, from time to time during the applicable Royalty Term, but at least once every [***] months, Licensee shall propose updates or amendments to the Commercialization Plan to reflect changes in such plans, including those in response to changes in the marketplace, relative success of the Product, and other relevant factors influencing such plan and activities, and submit such proposed updated or amended Commercialization Plan to the JSC. In preparing the initial Commercialization Plan and any updates or amendments thereto, Licensee shall provide Allogene with an opportunity to comment and Licensee shall consider any Allogene's comments in good faith in finalizing the initial Commercialization Plan and any updates or amendments thereto.

6.5 Commercialization Reports. Each Calendar Year following receipt of the first Regulatory Approval for any Product in any jurisdiction or region in the Licensee Territory, Licensee shall provide to the JSC annually within [***] days after the end of such Calendar Year during the applicable Royalty Term a written report that summarizes Licensee's, its Affiliates' and Sublicensees' significant Commercialization activities with respect to the approved Products in the Licensee Territory. All updates and reports generated pursuant to this Section 6.5 shall be the Confidential Information of Licensee.

6.6 Global Branding Strategies; Product Trademarks. Allogene shall have the right and responsibility in formulating global branding strategies for the Products. Licensee shall reasonably cooperate with Allogene and evaluate and consider in good faith changes in its branding strategy that would be necessary to implement such global branding strategy for the Products in the Licensee Territory, and shall conduct commercialization activities in the Licensee Territory in accordance with due consideration of such global branding strategy. Specifically, Licensee shall only use (pursuant to this Section 6.6), and shall cause its Affiliates and Sublicensees to only use, the trademarks Controlled by Allogene in the Licensee Territory as Allogene may provide to Licensee in writing from time to time (the "***Allogene Product Marks***"). Allogene hereby grants to Licensee, during the Term and subject to the terms and conditions of this Agreement, a royalty-free, exclusive license under Allogene's rights to use such Allogene Product Marks in connection with the Commercialization of the Products in the Field in the Licensee Territory in compliance with Applicable Laws. Licensee may also adopt, register and use other trademarks, logos, and trade names in local language in the applicable jurisdiction in the Licensee Territory to co-brand the Product (the "***Local Product Marks***"); provided, *however*, that (a) Licensee will endeavor in good faith to ensure that such Local Product Marks shall be consistent with Allogene's global branding strategy, (b) prior to first use, Licensee shall submit such trademarks, logos and trade names for Allogene's prior review and comment, (c) Licensee shall consider in good faith any comments received in a timely manner from Allogene, and (d) Licensee may thereafter apply for registration of such Local Product Marks in its name and at its cost in the Licensee Territory.

6.7 Ex-Licensee Territory and Ex-Field Activities. Licensee hereby covenants and agrees that during the Term it shall not (and shall cause its Affiliates and Sublicensees and subcontractors not to), either itself or through a Third Party, develop, use, market, promote,

import, export, sell or actively offer for sale the Products outside the Field in the Licensee Territory or in or outside the Field in the Allogene Territory. Without limiting the generality of the foregoing, Licensee shall not (i) engage in any advertising activities relating to the Products directed primarily to customers in the Allogene Territory (which excludes any participation in conferences, congresses or scientific or medical meetings held throughout the world), or (ii) actively or intentionally solicit orders from any prospective purchaser located in the Allogene Territory. To the extent permitted by Applicable Laws, including applicable antitrust laws, if Licensee receives any order for Allogene's product or Products from a prospective purchaser located in a jurisdiction in the Allogene Territory, Licensee shall immediately refer that order to Allogene and shall not accept any such order or deliver or tender (or cause to be delivered or tendered) the Products under such order. If Licensee should reasonably know that a customer or distributor is actively engaged itself or through a Third Party in the sale or distribution of the Products in the Allogene Territory or outside the Field within the Licensee Territory, then Licensee shall (A) within [***] Business Days of gaining knowledge of such activities, notify Allogene regarding such activities and provide all information available to Licensee that Allogene may reasonably request concerning such activities and (B) use Commercially Reasonable Efforts (including cessation of sales to such customer) necessary to limit such sale or distribution outside the Licensee Territory or the Field, unless otherwise agreed in writing by the Parties.

Article 7
Governance.

7.1 Joint Steering Committee. Within [***] Business Days after the Effective Date, the Parties shall establish a Joint Steering Committee ("***JSC***") to oversee and coordinate the activities of the Parties under this Agreement. The JSC shall in particular:

(i) review, discuss, adopt and coordinate the overall strategy for the Development, Manufacturing, and Commercialization of the Products in the Licensee Territory;

(ii) review and discuss and approve the feasibility of pursing Development of the Products for different indications in the Field in the Licensee Territory;

(iii) review and adopt the Development Plan and review, discuss and approve any proposed amendments or revisions to the Development Plan;

(iv) review, discuss and approve any clinical protocols as well as amendment thereto;

(v) review and discuss the operation of any Development activities by Licensee;

(vi) oversee and coordinate the on-going disclosure, sharing and/or transfer of new Inventions or Information generated in or related to the Development of the Products in the Licensee Territory;

(vii) review and discuss any Regulatory Documents to be submitted to any Regulatory Authority in the Licensee Territory;

(viii) review and adopt Manufacturing technology transfer plan, review, discuss and approve any proposed amendments or revisions thereto;

(ix) Oversee the Manufacturing technology transfer and implementation of the Manufacturing technology transfer process, and approve any CMO that will be used by Licensee or its Affiliates in the Licensee Territory;

(x) review and adopt Commercialization Plan (including pricing strategy), amend and review, discuss and approve any proposed amendments or revisions to the Commercialization Plan;

(xi) coordinate the Commercialization of the Products in the Field in the Licensee Territory and in the Allogene Territory to ensure consistent global branding and marketing of the Products; and

(xii) perform such other functions as appropriate to further the purposes of this Agreement, as expressly set forth in this Agreement or as determined by the Parties in writing.

(a) Composition. The JSC shall be composed of an equal number of representatives of each of Licensee and Allogene, and each Party shall notify the other Party of its initial JSC representatives within [***] days after the Effective Date. Each Party may change its representatives to the JSC from time to time in its sole discretion, effective upon notice to the other Party of such change. Each Party's JSC representatives shall be employees of such Party or its Affiliates with appropriate experience and authority within such Party's organization. In addition, at least one of Licensee's JSC representatives must be someone whose job responsibilities within Licensee include active involvement in the development and implementation of the Licensee's Development strategy with respect to the Products in the Field in the Licensee Territory, and each of Licensee's JSC representatives must have up-to-date knowledge of Licensee's ongoing and planned Development activities with respect to the Products in the Field in the Licensee Territory. A reasonable number of representatives of each Party who are not JSC members may attend meetings of the JSC. The JSC may establish and disband subcommittees as deemed necessary by the JSC. Each such subcommittee shall consist of the same number of representatives designated by each Party, which number shall be mutually agreed by the Parties. Each Party shall be free to change its representatives on written notice to the other Party or to send a substitute representative to any subcommittee meeting. No subcommittee shall have the authority to bind the Parties hereunder and each subcommittee shall report to the JSC.

(b) Decision-Making.

(i) All decisions of the JSC shall be made by unanimous vote, with each Party's representatives collectively having one vote. If after reasonable discussion and

good faith consideration of each Party's view on any matter within the decision-making authority of the JSC, the representatives of the Parties on the JSC cannot reach an agreement as to such matter within [***] Business Days after such matter was brought to the JSC for resolution or after such matter has been referred to the JSC, such disagreement shall be referred to the Chief Executive Officer of Allogene and the Chief Executive Officer of Licensee (or, in each case, any designee with decision-making authority at a level of at least Senior Vice President) (collectively, the "***Executive Officers***") for resolution.

(ii) If the Executive Officers cannot resolve such matter within [***] days after such matter has been referred to them, then, (A) the Licensee shall be empowered to make the final decision with respect to all matters that are Licensee Territory-specific matters (including without limitation, patent listings in the Licensee Territory under Section 11.6), other than Licensee Territory-specific matters that would reasonably be expected to adversely and materially affect Products in the Allogene Territory, which shall be subject to Allogene's final decision making power and (B) Allogene shall be empowered to make the final decision on all matters relating to (i) Products outside the Licensee Territory and (ii) any Multi-Region Trials.

(c) Limitations on Authority. The JSC shall have only such powers as are expressly assigned to it in this Agreement, and such powers shall be subject to the terms and conditions of this Agreement. Without limiting the generality of the foregoing, the JSC shall not have the power to amend this Agreement, and no decision of the JSC may be in contravention of any terms and conditions of this Agreement.

(d) Meetings. The JSC will hold a meeting every [***] months or sooner, if needed, as reasonably agreed to by the Parties. Such meetings may be in person, via videoconference, or via teleconference. The location of in-person powers meetings will be determined by the Parties. At least [***] Business Days prior to each JSC meeting, each Party shall provide written notice to the other Party of agenda items proposed by such Party for discussion at such meeting, together with appropriate information related thereto. Reasonably detailed written minutes will be kept of all JSC meetings. Meeting minutes will be prepared by alliance managers of Allogene and the Licensee and sent to each member of the JSC for review and approval within [***] Business Days after the meeting. Minutes will be deemed approved unless a member of the JSC objects to the accuracy of such minutes within [***] Business Days of receipt.

Article 8
Payments

8.1 Upfront Fee. Licensee shall pay to Allogene upfront consideration consisting of (a) and (b) below:

(a) Licensee shall make a one-time, nonrefundable, noncreditable payment to Allogene of US$40,000,000 within five (5) Business Days after the Effective Date; and

(b) Pursuant to the Share Subscription Agreement, Licensee shall issue to Allogene, on the Effective Date, shares of Series Seed Preferred stock of Licensee representing forty-nine percent (49%) of the issued and outstanding share capital of Licensee on a fully-diluted, as-converted basis.

8.2 Development and Regulatory Milestone Payments. With respect to each milestone event set forth in the table below, within [***] days following the first achievement, whether by Licensee or any of Licensee's Affiliates or Sublicensees, of the corresponding milestone event with respect to any Product, Licensee shall notify Allogene of the first such achievement, and Licensee shall pay to Allogene the corresponding nonrefundable, noncreditable, one-time milestone payment within [***] days after such achievement:

Product Milestone Event	Milestone Payment (in U.S. Dollars)
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

8.3 Royalties. On a Product-by-Product basis during the applicable Royalty Term, Licensee shall pay tiered royalties to Allogene on incremental Aggregate Annual Net Sales of the Products in the Licensee Territory in each Calendar Quarter at the applicable rate(s) set forth below:

Increments of Aggregate Annual Net Sales of the Products	Royalty Rate
That portion of Aggregate Annual Net Sales that is less than or equal to [***]	[***]
That portion of Aggregate Annual Net Sales that is greater than [***] and less than or equal to [***]	[***]
That portion of Aggregate Annual Net Sales that is greater than [***] and less than or equal to [***]	[***]
That portion of Aggregate Annual Net Sales that is greater than [***]	[***]

8.4 Royalty Term. Royalties under Section 8.3 shall be paid on a jurisdiction-by-jurisdiction and Product-by-Product basis for each Product in the Licensee Territory during the period commencing from the First Commercial Sale of such Product and ending upon the latest of: (a) [***] years from the date of First Commercial Sale of such Product in such jurisdiction; (b) the expiration of the last-to-expire Valid Claim of the Allogene Patents (including Joint Invention Patents) covering the Manufacture, use or sale of the Product in such jurisdiction; and (c) the expiration of the Regulatory Exclusivity for such Product in such jurisdiction (the "***Royalty Term***"); provided, the time periods set forth in subsections (b) and (c) in this Section 8.4 shall not be based on or affected by any Valid Claim Covering any Invention that is solely invented by

Licensee (or its Affiliates or Sublicensees) and which is required to be assigned by Licensee to Allogene under this Agreement.

8.5 Third Party Payments. Licensee shall be responsible for all Known Third-Party Obligations existing as of the Effective Date that are set forth in Schedule 1.74, and shall make such payments directly to the applicable Third Parties to satisfy such Known Third-Party Obligations. With respect to a particular jurisdiction within the Licensee Territory, if Developing, Manufacturing, using or Commercializing any Compound or Product or practicing (or sublicensing) any of the Allogene Technology would be impractical or impossible without obtaining a Third Party IP License, then Licensee will be entitled to deduct from royalty payments under Section 8.3 otherwise payable to Allogene in such jurisdiction by an amount equal to [***] percent ([***]%) of the Third Party IP Costs allocable to such jurisdiction and actually paid by Licensee (or any of its Affiliates or Sublicensees) to a Third Party under a Third Party IP License, *provided*, no payment shall be reduced by more than [***] percent ([***]%) of the royalties otherwise owed to Allogene for such jurisdiction in such Calendar Quarter, although any excess royalties may be carried over and applied against subsequent royalties due for such jurisdiction in subsequent Calendar Quarters.

8.6 Payment; Reports. Royalties shall be calculated and reported for each Calendar Quarter and shall be paid within [***] days after the end of each Calendar Quarter. Each payment shall be accompanied by a report of Net Sales of the Products by Licensee, its Affiliates and Sublicensees in sufficient detail to permit confirmation of the accuracy of the payment made, including gross sales and Net Sales of the Products on a jurisdiction-by-jurisdiction, the royalty payable, the method used to calculate the royalties, and the exchange rates used to calculate the royalties.

8.7 Exchange Rate; Manner and Place of Payment. All payments hereunder shall be payable in U.S. dollars. When conversion of payments from any foreign currency is required, such conversion shall be at an exchange rate equal to the average of the rates of exchange for the currency of the jurisdiction from which such payments are payable as published by *The Wall Street Journal*, Western U.S. Edition during the Calendar Quarter for which a payment is due. All payments owed under this Agreement shall be made by wire transfer in immediately available funds to a bank and account designated in writing by Allogene, unless otherwise specified in writing by Allogene.

8.8 Taxes.

(a) General. In the event any withholding, value added, or other tax (including any tax based on income to Allogene) ("***Tax Withholdings***") is required to be withheld and deducted from payments by Licensee (or its Affiliate paying on behalf of Licensee) pursuant to this Agreement under Applicable Laws, Licensee (or its Affiliate paying on behalf of Licensee) will make such deduction and withholding and will pay the remainder to Allogene, and any amounts so withheld and deducted will be remitted by Licensee (or its Affiliate paying on behalf of Licensee) on a timely basis to the appropriate Governmental Authority for the account of Allogene and Licensee (or its Affiliate paying on behalf of Licensee) will provide Allogene reasonable evidence of the remittance within [***] days thereof and for the purposes of this

Agreement, Licensee will be deemed to have fulfilled all of its payment obligations to Allogene with respect to such payments paid to the such Governmental Authority. Licensee may satisfy its withholding, value added or other tax obligations under this Section 8.8(a) through its Affiliates.

(b) Taxes Resulting From Licensee Action. Notwithstanding Section 8.8(a), if, as a result of any action by Licensee, including assignment, sublicense or transfer of this Agreement, change in the residence of Licensee for tax purposes, change in the entity making such payment, or failure on the part of Licensee to comply with applicable Laws or filing or record retention requirements, the amount of any tax (including income tax, value added tax, interest, or penalties) that Licensee is required to deduct or withhold from a payment made by Licensee to Allogene under this Agreement is increased such that the aggregate deduction or withholding is more than [***] percent ([***]%), then the sum payable by Licensee to Allogene shall be increased to the extent necessary to ensure that Allogene receives a sum equal to the sum that Allogene would have received had no such action occurred, less [***] percent ([***]%).

(c) Tax Cooperation. Allogene and Licensee shall cooperate with respect to all documentation required by any taxing authority, the preparation of any tax returns, or reasonably requested by either Allogene or Licensee to secure a reduction in the rate of applicable taxes. Each of Allogene and Licensee shall provide the other Party and its Affiliates with reasonable assistance to enable Allogene and Licensee to recovery, as permitted by applicable Laws, of Tax Withholdings resulting from payments made under this Agreement, such recovery to be for the benefit of the Party bearing such Tax Withholdings. The Parties hereby agree to consult in good faith and use reasonable efforts to structure the Licensee's exploitation of the licenses granted hereunder and expansion in the Licensee Territory with the intent of minimizing taxes, charges or duties in accordance with Applicable Law.

8.9 Blocked Currency. If by applicable Laws or fiscal policy of a jurisdiction in the Licensee Territory, conversion into US Dollars or transfer of funds of a convertible currency to the United States is restricted, forbidden or substantially delayed, then amounts accrued in such jurisdiction under this Agreement will be paid to Allogene in such jurisdiction in local currency by deposit in a local bank designated by Allogene, unless Allogene and Licensee otherwise agree.'

8.10 Records; Audits.

(a) Records. Licensee shall keep, and require its Affiliates and Sublicensees to keep, complete, fair and true books of accounts and records for the purpose of determining the amounts payable to Allogene pursuant to this Agreement. Such books and records shall be kept for at least [***] full Calendar Years following the end of the Calendar Year to which they pertain.

(b) Audits. During the term of this Agreement and for a period of [***] years thereafter, upon [***] days prior notice from Allogene, Licensee will permit, and will cause its Affiliates and Sublicensees to permit, an independent certified public accounting firm of nationally recognized standing selected by Allogene and reasonably acceptable to Licensee, to examine, at Allogene's sole expense, the relevant books and records of Licensee, its Affiliates

and Sublicensees for the sole purpose of verifying the amounts reported by Licensee in accordance with Section 8.3 and the payment of royalties and milestone payments hereunder. An audit by Allogene under this Section 8.10 will occur not more than once in any Calendar Year, unless otherwise requested by the Upstream Licensors pursuant to the applicable Existing Allogene In-Licenses, and will be limited to the pertinent books and records for any Calendar Year ending not more than [***] years before the date of the request. The accounting firm will be provided access to such books and records at the facility(ies) of Licensee, its Affiliates or Sublicensees, as applicable, where such books and records are normally kept and such examination will be conducted during normal business hours. Licensee or the applicable Sublicensee may require the accounting firm to sign a reasonably acceptable non-disclosure agreement before providing the accounting firm with access to facilities or records. Upon completion of the audit, the accounting firm will provide both Allogene and Licensee a written report disclosing any discrepancies in the reports submitted by Licensee or the royalties or milestone payments paid by Licensee, and, in each case, the specific details concerning any discrepancies. Such accounting firm shall not disclose Licensee's Confidential Information to Allogene, except to the extent such disclosure is necessary to verify the accuracy of the reports furnished by Licensee in accordance with Section 8.3 or the amount of payments by Licensee under this Agreement, in which case Allogene's obligations with respect to such Confidential Information shall be subject to Article 9.

(c) Overpayments and Underpayments. If such accounting firm concludes that additional royalties or milestone payments were due to Allogene and which are undisputed by Licensee, then Licensee will pay to Allogene the additional royalties or milestone payments within [***] days of the date Licensee receives such accountant's written report. Further, if the amount of such underpayments exceeds more than [***] percent ([***]%) of the amount that was properly payable to Allogene, then Licensee will reimburse Allogene for Allogene's reasonable documented out-of-pocket costs incurred to conduct the audit. If such accounting firm concludes that Licensee overpaid royalties or milestone payments to Allogene, then such overpayments will be credited against future amounts payable by Licensee to Allogene, or, if no further payments are to be made to Allogene under this Agreement, Allogene shall promptly repay such overpayment.

(d) Confidentiality. Notwithstanding any provision of this Agreement to the contrary all reports and financial information of Licensee or its Affiliates' or Sublicensees which are provided to or subject to inspection, audit, or review by Allogene under this Section 8.10 or elsewhere in this Agreement (including without limitation, all Development reports, Commercialization reports, royalty reports, and other books and records) will be deemed to be Licensee's Confidential Information and subject to the provisions of Article 9.

8.11 Late Payments. Any payments not made by Licensee on or before the date such payments become due under this Agreement shall bear interest at a floating rate equal to the prime interest rate quoted by The Wall Street Journal, Internet U.S. Edition at www.wsj.com on the date when the payment was due plus [***] percent ([***]%) or the highest rate permitted by law (whichever is lower), computed from the date such payment was due until the date Licensee makes the payment. If such prime interest rate is no longer quoted, the Parties shall agree on a

reasonable substitute therefor. The payment of such interest shall not limit Allogene from exercising any other rights it may have as a consequence of the lateness of any payment.

Article 9
Confidentiality

9.1 Confidential Information

. Except to the extent expressly authorized by this Agreement or otherwise agreed in writing by the Parties, each Party (in such capacity, the "***Receiving Party***") agrees that, during the Term and for [***] years thereafter, it shall keep confidential and shall not publish or otherwise disclose to any Third Party, and shall not use for any purpose other than as expressly provided for in this Agreement or any other written agreement between the Parties, including the Supply and Quality Agreements, any Confidential Information furnished or made available to it by or on behalf of the other Party (in such capacity, the "***Disclosing Party***"). The Receiving Party shall use at least the same standard of care as it uses to protect proprietary or confidential information of its own (but in no event less than reasonable care) to ensure that its, and its Affiliates', employees, agents, consultants and other representatives do not disclose or make any unauthorized use of the Confidential Information. The Receiving Party shall promptly notify the Disclosing Party upon discovery of any unauthorized use or disclosure of the Disclosing Party's Confidential Information.

9.2 Exceptions. Confidential Information shall not include any information which the Receiving Party can prove by competent evidence: (a) is now, or hereafter becomes, through no act or failure to act on the part of the Receiving Party, generally known or available to the public; (b) is rightfully known by the Receiving Party and/or any of its Affiliates (and/or in the case of Licensee, its Sublicensees) at the time of receiving such information, as evidenced by its records; (c) is hereafter furnished to the Receiving Party and/or any of its Affiliates by a Third Party, as a matter of right and without restriction; or (d) is independently discovered or developed by the Receiving Party and/or any of its Affiliates (and/or in the case of Licensee, its Sublicensees), without the use of or reference to Confidential Information of the Disclosing Party.

9.3 Authorized Disclosure. Notwithstanding the provisions of Section 9.1, the Receiving Party may disclose Confidential Information of the Disclosing Party as expressly permitted by this Agreement, or if and to the extent such disclosure is reasonably necessary in the following instances:

(a) as reasonably necessary to obtain and maintain Regulatory Approval or to otherwise Develop, Manufacture, use or Commercialize Products in accordance with this Agreement;

(b) disclosure to Affiliates, actual and potential licensees and Sublicensees, employees, consultants, advisors or agents of the Receiving Party who have a need to know such information in order for the Receiving Party to exercise its rights or fulfill its obligations under

this Agreement, provided, in each case, that any such Affiliate, actual or potential licensee or Sublicensee, employee, consultant or agent agrees to be bound by obligations of confidentiality and non-use (or are bound by professional obligations of privilege) that are no less stringent than the confidentiality and non-use obligations contained hereof;

(c) in the case of Allogene, disclosure to the extent required to comply with the Existing Allogene In-Licenses; and

(d) disclosure to bona-fide potential or actual Third Party investors, collaborators or acquirers in confidential financing documents, provided, in each case, that any such Third Party agrees to be bound by reasonable and customary obligations of confidentiality and non-use.

Notwithstanding the foregoing, in the event a Party is required to make a disclosure of the other Party's Confidential Information pursuant to Section 9.3(c) or Section 9.3(d), it will, except where impracticable, give reasonable advance notice to the other Party of such disclosure and use efforts to secure confidential treatment of such information at least as diligent as such Party would use to protect its own confidential information, but in no event less than commercially reasonable efforts. In any event, the Parties agree to take all reasonable action to avoid disclosure of Confidential Information hereunder.

It shall not be considered a breach of this Agreement if the Receiving Party discloses Confidential Information in order to comply with a lawfully issued court or governmental order or with a requirement of Applicable Laws or the rules of any internationally recognized stock exchange; provided that: (i) the Receiving Party gives prompt written notice of such disclosure requirement to the Disclosing Party and cooperates with the Disclosing Party's efforts to oppose such disclosure or obtain a protective order for such Confidential Information, and (ii) if such disclosure requirement is not quashed or a protective order is not obtained, the Receiving Party shall only disclose those portions of the Confidential Information that it is legally required to disclose and shall make a reasonable effort to obtain confidential treatment for the disclosed Confidential Information. To the extent there is any conflict between this Article 9 and any other agreement related to Confidential Information entered into between the Parties, this Agreement shall control.

9.4 Public Announcements.

(a) Press Releases. As soon as practicable following the Effective Date, Allogene and Overland Pharmaceuticals (US) Inc. shall issue a joint press release announcing the execution of this Agreement in a form mutually agreed by the Parties. Except as required by applicable securities laws (including disclosure requirements of the U.S. Securities and Exchange Commission ("***SEC***") or any stock exchange on which securities issued by a Party or its Affiliates are traded), neither Party shall make any other public announcement concerning this Agreement or the subject matter hereof without the prior written consent of the other, which shall not be unreasonably withheld or delayed; provided that each Party may make any public statement in response to questions by the press, analysts, investors or those attending industry conferences or financial analyst calls, or issue press releases, so long as any such public

statement or press release is not inconsistent with prior public disclosures or public statements approved by the other Party pursuant to this Section 9.4 and which do not reveal nonpublic information about the other Party. In the event of a required public announcement, to the extent practicable under the circumstances, the Party making such announcement shall provide the other Party with a copy of the proposed text of such announcement sufficiently in advance of the scheduled release to afford such other Party a reasonable opportunity to review and comment upon the proposed text.

(b) Filing of this Agreement. The Parties shall coordinate in advance with each other in connection with the filing of this Agreement (including redaction of certain provisions of this Agreement) with the SEC or any stock exchange or governmental agency on which securities issued by a Party or its Affiliate are traded, and each Party will use reasonable efforts to seek confidential treatment for the terms proposed to be redacted; provided that each Party will ultimately retain control over what information to disclose to the SEC or any stock exchange or other governmental agency, as the case may be, and provided further that the Parties will use their reasonable efforts to file redacted versions with any governing bodies which are consistent with redacted versions (if any) previously filed with any other governing bodies. Other than such obligation, neither Party (nor its Affiliates) will be obligated to consult with or obtain approval from the other Party with respect to any filings to the SEC or any stock exchange or other governmental agency.

9.5 Publication. At least [***] days prior to publishing, publicly presenting, and/or submitting for written or oral publication a manuscript, abstract or the like that includes Information relating to any of the Products that has not been previously published, Licensee shall provide to Allogene a draft copy thereof for its review (unless Licensee is required by law to publish such Information sooner, in which case Licensee shall provide such draft copy to the Allogene as much in advance of such publication as possible). Licensee shall consider in good faith any comments provided by Allogene within [***] days of receiving the draft. In addition, Licensee shall, at Allogene's reasonable request, remove therefrom any Confidential Information of Allogene. Allogene shall also have the right to delay any presentation or publication for [***] days to enable the filing of patent applications protecting any Product. The contribution of each Party shall be noted in all publications or presentations by acknowledgment or co-authorship, whichever is appropriate. At least [***] days prior to publishing or publicly presenting Information relating to any of the Products that has not been previously published or publicly presented, Allogene shall provide to Licensee a draft copy thereof (unless Allogene is required by law to publish such Information sooner, in which case Allogene shall provide such draft copy to the Licensee as much in advance of such publication or presentation as practicable or, if prior notice is not practicable, promptly following such publication or presentation).

9.6 Prior Non-Disclosure Agreement. As of the Effective Date, the terms of this Article 9 shall supersede any prior non-disclosure, secrecy or confidentiality agreement between the Parties (or their Affiliates) dealing with the subject of this Agreement, including the Confidentiality Agreement. Any information disclosed pursuant to any such prior agreement shall be deemed Confidential Information for purposes of this Agreement.

9.7 Equitable Relief. Given the nature of the Confidential Information and the competitive damage that would result to a Party upon unauthorized disclosure, use or transfer of its Confidential Information to any Third Party, the Parties agree that monetary damages would not be a sufficient remedy for any breach of this Article 9. In addition to all other remedies, a Party shall be entitled to seek specific performance and injunctive and other equitable relief as a remedy for any breach or threatened breach of this Article 9.

Article 10
Representations and Warranties; Limitation of Liability

10.1 Mutual Representations and Warranties. Each Party represents and warrants to the other that, as of the Effective Date:

(a) it is duly organized and validly existing under the laws of its jurisdiction of incorporation or formation, and has full corporate or other power and authority to enter into this Agreement and to carry out the provisions hereof;

(b) it is duly authorized to execute and deliver this Agreement and to perform its obligations hereunder, and the person or persons executing this Agreement on its behalf has been duly authorized to do so by all requisite corporate or partnership action; and

(c) this Agreement is legally binding upon it, enforceable in accordance with its terms, and does not and will not conflict with any agreement, instrument or understanding, oral or written, to which it is a party or by which it may be bound (including without limitation and subject to Section 2.7, in the case of Allogene, any Existing Allogene In-License), nor violate any material law or regulation of any court, governmental body or administrative or other agency having jurisdiction over it.

10.2 Additional Allogene Representations and Warranties. Solely for the purposes of this Section 10.2, the term "Compounds" shall also include the 647 Compound and the term "Products" shall also include the 647 Product. Allogene represents and warrants to Licensee, as of the Effective Date, as follows:

(a) Allogene (i) has sufficient legal and/or beneficial title or ownership or license (including without limitation, pursuant to each of the Existing Allogene In-Licenses), free and clear from any mortgages, pledges, liens, security interests, encumbrances, charges or claim of any kind, of the Allogene Technology to grant the license that it purports to grant in Section 2.1 (subject to Section 2.7); and (ii) has not granted and will not grant during the Term any option, license, or other right to any Third Party with respect to the Compounds, Products, or Allogene Technology that would conflict with the license grant set forth in Section 2.1 or other rights granted to Licensee hereunder;

(b) Allogene has not received any written notice that any Third Party has taken any action before any applicable patent office, court, or other tribunal, claiming ownership of any Allogene Technology;

(c) Allogene has not received any written notice from any Third Party asserting that the issued patents within the Allogene Patents are invalid or unenforceable;

(d) to the knowledge of Allogene, no reexamination, interference, invalidity, opposition, nullity or similar claim or proceeding is pending or threatened with respect to any Allogene Patent;

(e) in addition to the representations and warranties in Section 10.2(c) and Section 10.2(d), there are no other pending or, to Allogene's knowledge, threatened (in writing), claims, suits or proceedings involving any of the Allogene Technology, Compounds, or Products;

(f) Schedule 1.13 includes all Patents that are Controlled by Allogene or any of its Affiliates as of the Effective Date that claim or cover any Compound or Product or any method of use thereof or manufacturing process related thereto in the Licensee Territory;

(g) Schedule 1.49 includes all agreements to which Allogene or any of its Affiliates are parties under which a Third Party grants a license to Allogene or any of its Affiliates under (i) any Patents that Cover the Development, Manufacture, use, or Commercialization of any Compound or Product in the Field in the Licensee Territory or (ii) any material Know-How that relates to the Compounds or Products and is necessary or reasonably useful for the Development, Manufacture, use, or Commercialization of any Compound or Product in the Field in the Licensee Territory;

(h) Allogene and all other parties to the Existing In-License Agreements are and have been in full compliance with their respective obligations thereunder, without material breach or default of any kind; and

(i) all pre-clinical activities related to any Product conducted by Allogene and all of its Affiliates prior to the Effective Date have complied with all Applicable Laws, and all Clinical Trials related to any Product initiated prior to the Effective Date have complied with all Applicable Laws and GCP.

10.3 Additional Licensee Representations and Warranties. Licensee represents and warrants to Allogene, as of the Effective Date:

(a) Licensee (i) has the right to grant the license that it purports to grant in Section 2.6; and (ii) has not as of the Effective Date, and will not during the Term, grant any right to any Third Party that would conflict with the license or rights granted to Allogene hereunder.

(b) neither Licensee nor any of its Affiliates is debarred or disqualified under the United States Federal Food, Drug and Cosmetic Act or comparable Applicable Laws in the Licensee Territory; and

(c) each of Licensee and its Affiliates is not, and shall not become, a person or entity with whom U.S. persons or entities is restricted from doing business with under regulations of the Office of Foreign Asset Control ("***OFAC***") of the Department of the Treasury (including, but not limited to, those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order, sanctions, or other governmental action.

10.4 Licensee Covenants. In addition to any covenants made by Licensee elsewhere in this Agreement, Licensee hereby covenants to Allogene as follows:

(a) Licensee will not knowingly, during the Term, employ or use the services of any person who is debarred or disqualified to perform any activities relating to the Compound or Products; and in the event that Licensee becomes aware of the debarment or disqualification or threatened debarment or disqualification of any person providing services to Licensee with respect to any activities relating to the Compound or Products, Licensee will immediately notify Allogene in writing and Licensee will cease employing, contracting with, or retaining any such person to perform any services relating to the Compound or Products;

(b) Licensee will not, in connection with the performance of its obligations under this Agreement, directly or indirectly through Third Parties, pay, promise or offer to pay, or authorize the payment of, any money or give any promise or offer to give, or authorize the giving of anything of value to a public official or entity or other person for purpose of obtaining or retaining business for or with, or directing business to, any person, including Licensee, nor will Licensee directly or indirectly promise, offer or provide any corrupt payment, gratuity, emolument, bribe, kickback, illicit gift or hospitality or other illegal or unethical benefit to a public official or entity or any other person in connection with the performance of Licensee's obligations under this Agreement, which promise, offer, payment, or other act would be illegal under any Applicable Law;

(c) Licensee has in place an anti-corruption and anti-bribery policy and in connection with the performance of its obligations under this Agreement, Licensee shall comply and shall cause its and its Affiliates' employees to comply with Licensee's policy;

(d) Licensee shall, and shall ensure that its Affiliates and Sublicensees and its and their respective employees and contractors will, not cause Allogene to be in violation of the FCPA, Export Control Laws, or any other Applicable Laws, including any other applicable anti-corruption and anti-bribery laws, in connection with the performance of Licensee's obligations under this Agreement;

(e) Licensee shall immediately notify Allogene if it has any information or suspicion that there may be a violation of the FCPA, Export Control Laws, or any other Applicable Laws, including any other applicable anti-corruption and anti-bribery laws, in connection with the performance of its obligations under this Agreement;

(f) To the extent applicable, Licensee shall, and require each Sublicensee to covenant and agree in the applicable sublicense agreement that such Sublicensee shall (i) (A) not modify or reverse engineer or attempt to modify or reverse engineer [***], and (B) shall assign, and does presently assign, to Upstream Licensor 1 all property rights, Know-How, Patents and other intellectual property rights in or to any animal cell or other biological material resulting from activities that constitute a breach of the foregoing clause (A), (ii) shall comply with all Applicable Laws applicable to the care, handling, use and disposal of the Subject Antibodies or Subject Antibody Materials, and (iii) shall not use Subject Antibodies, Subject Antibody Materials or Allogene Technology beyond the scope of the rights granted under this Agreement; and

(g) In the course of performing its obligations or exercising its rights under this Agreement, Licensee shall comply with this Agreement and all Applicable Laws, including as applicable, cGMP, GCP, and GLP standards. Licensee shall adopt policies and implement procedures to protect the confidentiality of any and all Allogene Know-How.

10.5 Performance by Affiliates, Sublicensees and Subcontractors. The Parties recognize that each Party may perform some or all of its obligations or exercise some or all of its rights under this Agreement through one or more Affiliates or subcontractors or, in the case of Licensee, Sublicensees; *provided,* in each case, that (a) none of the other Party's rights hereunder are diminished or otherwise adversely affected as a result of such delegation or subcontracting, and (b) each such Affiliate, subcontractor or Sublicensee undertakes in writing obligations of confidentiality and non-use regarding Confidential Information and ownership of Inventions which are substantially the same as those undertaken by the Parties pursuant to Article 9 and Section 11.1; and *provided, further,* that such Party shall at all times be fully responsible for the performance and payment of such Affiliate, subcontractor or Sublicensee.

10.6 Disclaimer. EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, THE TECHNOLOGY AND INTELLECTUAL PROPERTY RIGHTS PROVIDED BY ALLOGENE HEREUNDER AND THE ASSISTANCE TO BE PROVIDED BY ALLOGENE TO LICENSEE HEREUNDER ARE PROVIDED "AS IS," AND ALLOGENE EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF DESIGN, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OBTAINING SUCCESSFUL RESULTS, NON-INFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICES.

Article 11
Intellectual Property

11.1 Ownership.

(a) General. The determination of whether Patents and Know-How are conceived, discovered, developed or otherwise made by a Party for the purpose of allocating

proprietary rights (including Patent, copyright or other intellectual property rights) therein, will, for purposes of this Agreement, be made in accordance with Applicable Law in the United States, irrespective of where such conception, discovery, development or making occurs.

(b) Ownership of Collaboration IP. Any and all Inventions, together with all Know-How, Patents and other intellectual property rights arising therefrom, that modify, enhance, or otherwise improve the Allogene Platform thereof (the "**Platform Inventions**") shall be solely owned by Allogene, whether they are created, conceived or generated by or on behalf solely of one Party or jointly of both Parties. Ownership of all remaining Inventions (other than Platform Inventions) and all Know-How, Patents and other intellectual property rights arising therefrom, created, conceived or generated by or on behalf of a Party (whether solely, jointly with the other Party, or jointly with a Third Party) in the performance of any activities under this Agreement shall be determined by inventorship, i.e. (i) all remaining Inventions (other than the Platform Inventions), together with all Know-How, Patents and other intellectual property rights arising therefrom, that is created, conceived or generated solely by or on behalf of Allogene shall be owned by Allogene solely (the "**Allogene Inventions**"), (ii) all remaining Inventions (other than the Platform Inventions), together with all Know-How, Patents and other intellectual property rights arising therefrom, that is created, conceived or generated solely by or on behalf of Licensee shall be owned by Licensee solely (the "**Licensee Inventions**") and (iii) all remaining Inventions (other than the Platform Inventions), together with all Know-How, Patents and other intellectual property rights arising therefrom, that is created, conceived or generated by or on behalf of Allogene and Licensee jointly shall be owned by Allogene and Licensee jointly (the "**Joint Inventions**").

(c) Ownership of Joint Collaboration IP. Each Party shall have an undivided one-half interest in and to the Joint Inventions. Each Party will exercise its ownership rights in and to such Joint Inventions, including the right to license and sublicense or otherwise to exploit, transfer, or encumber its ownership interest, without an accounting or obligation to, or consent required from, the other Party, but subject to the licenses hereunder and the other terms and conditions of this Agreement. At the reasonable written request of a Party, the other Party shall in writing grant such consents and confirm that no such accounting is required to effect the foregoing regarding Joint Inventions.

(d) Disclosure. Licensee shall promptly disclose to Allogene all Inventions relating to Licensee Technology and all Platform Inventions created, conceived or generated by or on behalf of Licensee or its Affiliates or Sublicensees, in each case including all Invention disclosures or other similar documents submitted to Licensee by its or its Affiliates' employees, agents, or independent contractors relating thereto, and shall also promptly respond to reasonable requests from Allogene for additional information relating thereto. Licensee hereby assigns, and to the extent not presently assignable, agrees to assign to Allogene all of Licensee's right, title and interest in and to the Platform Inventions. Each Party shall promptly disclose to the other all Joint Inventions, in each case, including all invention disclosures or other similar documents submitted to such Party by its, or its Affiliates' employees, agents, or independent contractors relating thereto, and shall also promptly respond to reasonable requests from such notified Party for additional information relating thereto. In furtherance of the foregoing, to the extent

Licensee, or any of its Affiliates or Sublicensees is required under applicable Laws to pay a reward or remuneration to any employees or contractors who conceive, reduce to practice, discover, develop or otherwise make any Data, Patents or Inventions by or on behalf of Licensee or its Affiliates under or in connection with this Agreement, Licensee shall ensure that such employees or contractors agree to and are bound by a written inventor reward and remuneration policy or agreement that is legally sufficient under applicable Laws, including a specific waiver of pre-emption rights under the laws of the Licensee Territory, including for Affiliates or Sublicensees incorporated in the PRC, Article 326 of the PRC Contract Law, such that all right, title and interest in and to, and such employees or contractors shall not have any additional right or claim in or to, any Data, Patents, Inventions, and other intellectual property rights derived from their work other than the reward and remuneration they are entitled to under the inventor reward and remuneration policy or agreement of Licensee, the applicable Affiliate or Sublicensee, or such subcontractor. As between Allogene and Licensee, Licensee shall incur the costs associated with paying all such inventor awards and remuneration, and shall make, and shall cause its Affiliates and Sublicensees to make, timely payments to its or their respective employees and contractors in accordance with its or their respective inventor reward and remuneration policy or agreement with its employees.

(e) Licensee's Affiliates, Sublicensees and Subcontractors. Licensee shall ensure that each of its Affiliates, Sublicensees and subcontractors under this Agreement has a contractual obligation to disclose to Licensee all Data and Inventions generated, invented, discovered, developed, made or otherwise created by them or their employees, agents or independent contractors and that constitute Platform Inventions or Inventions relating to Licensee Technology, and to provide sufficient rights with respect thereto, so that Licensee can comply with its obligations under this Section 11.1.

11.2 Patent Prosecution and Maintenance.

(a) Existing Allogene In-Licenses. Licensee acknowledges and agrees that (a) the rights and obligations under this Section 11.2 are subject to the rights of the Upstream Licensors set forth in the Existing Allogene In-Licenses with respect to the Allogene Patents; (b) Allogene's obligations under this Agreement only apply to the extent of Allogene's rights with respect to participation in prosecution and maintaining the Allogene Patents under the Existing Allogene In-Licenses, and (c) it shall reasonably cooperate with Allogene in order to allow Allogene to comply with the prosecution procedures set forth in the Allogene In-Licenses.

(b) Definition. For purposes of this Section 11.2, the terms "prosecute," "prosecuting" and "prosecution," when used in reference to any Patent, shall be deemed to include, without limitation, control of any interferences, reissue proceedings, post-grant proceedings, oppositions and reexaminations with respect to such Patent.

(c) Allogene Patents. As between the Parties, Allogene shall have the sole right, at its own expense (other than with respect to filing costs in the Licensee Territory, which shall be borne by Licensee), to control the preparation, filing, prosecution (including any interferences, reissue proceedings and reexaminations), extensions, and maintenance of the Allogene Patents, including any Patents contained in the Allogene Inventions and Platform

Inventions. Allogene shall consult with, and consider in good faith the requests and suggestions of, the Licensee with respect to strategies for filing and prosecuting the Allogene Patents in the Licensee Territory, and otherwise keep Licensee reasonably informed of progress with regard to the preparation, filing, prosecution, extensions and maintenance of Allogene Patents in the Field in the Licensee Territory. Allogene will notify Licensee of all inter partes reviews, invalidity actions, conflict proceedings, reexaminations, reissuance, oppositions, revocation proceedings or any other material challenge relating to a given Allogene Patent in the Field in the Licensee Territory. In the event that Allogene desires to abandon or cease prosecution or maintenance of any Allogene Patent that Covers (i) a Compound or Product and no other product (an "**Allogene Product Patent**") in the Field in the Licensee Territory, or (ii) the 647 Compound or 647 Product in the Field in the Licensee Territory, (any of the foregoing Patents, including any Allogene Product Patent, an "**Allogene Protected Patent**"), Allogene shall provide reasonable prior written notice to Licensee of such intention (which notice shall, in any event, be given no later than [***] days prior to the next deadline for any action that may be taken with respect to such Patent with the applicable patent office), and upon Licensee's written election provided no later than [***] days after such notice from Allogene, Licensee may (but shall not be obligated to) takeover prosecution and/or maintenance of such Patent, in Allogene's name, at Licensee's direction and expense. In such case, Licensee shall consult with, and consider in good faith the requests and suggestions of, Allogene with respect to strategies for filing and prosecuting the applicable Allogene Protected Patents in the Licensee Territory, and otherwise keep Allogene reasonably informed of progress with regard to the preparation, filing, prosecution, extensions and maintenance of the applicable Allogene Protected Patents in the Field in the Licensee Territory. If Licensee does not provide such election within [***] days after such notice from Allogene or thereafter elects to discontinue prosecution or maintenance of any Allogene Protected Patent in the Licensee Territory, with respect to which it has previously made such election, Allogene may, in its sole discretion, cost, and expense, resume or continue prosecution and maintenance of such Patent or discontinue prosecution and maintenance of such Patent. The provisions of this Section 11.2(c) are subject to, if any, the rights of Allogene's Upstream Licensors with respect to the applicable Patents.

(d) Licensee Invention Patents. Licensee shall have the sole right, but not the obligation, at its own expense, to control the preparation, filing, prosecution (including any interferences, reissue proceedings and reexaminations) and maintenance of the Licensee Invention Patents worldwide.

(e) Joint Invention Patents. Allogene shall have the sole right, but not the obligation, at its own expense, to control the preparation, filing, prosecution (including any interferences, reissue proceedings and reexaminations), extensions and maintenance of the Joint Invention Patents in the Allogene Territory in the name of both Parties. Licensee shall have the sole right, but not the obligation, at its own expense, to control the preparation, filing, prosecution (including any interferences, reissue proceedings and reexaminations) and maintenance of the Joint Invention Patents in the Licensee Territory in the name of both Parties. Each Party (a "***Prosecuting Party***") shall keep the other Party reasonably informed of progress with regard to the preparation, filing, prosecution, extensions and maintenance of the Joint Invention Patents in the Prosecuting Party's territory. The Prosecuting Party will notify the other

Party of all inter partes reviews, invalidity actions, conflict proceedings, reexaminations, reissuance, oppositions, revocation proceedings or any other material challenge relating to a given Joint Invention Patent in the Prosecuting Party's territory. The Prosecuting Party will consult with, and consider in good faith the requests and suggestions of, the other Party with respect to strategies for filing and prosecuting the Joint Invention Patents in the Prosecuting Party's territory. In the event that the Prosecuting Party desires to abandon or cease prosecution or maintenance of any Joint Invention Patent in the Prosecuting Party's Territory, the Prosecuting Party shall provide reasonable prior written notice to the other Party of such intention (which notice shall, in any event, be given no later than [***] days prior to the next deadline for any action that may be taken with respect to such Patent with the applicable patent office), and upon the other Party's written election provided no later than [***] days after such notice from the Prosecuting Party, the other Party may (but shall not be obligated to) takeover prosecution and/or maintenance of such Patent, in the name of both Parties, at the other Party's direction and expense. If the other Party does not provide such election within [***] days after such notice from the Prosecuting Party or thereafter elects to discontinue prosecution or maintenance of any Joint Invention Patent in the Prosecuting Party's Territory, with respect to which it has previously made such election, the Prosecuting Party may, in its sole discretion, cost, and expense, resume or continue prosecution and maintenance of such Patent in the name of both Parties or discontinue prosecution and maintenance of such Patent.

(f) Other IP. Licensee may not file any patent application anywhere in the world claiming or Covering any [***]. Additionally, Licensee may not disclose portions of a [***] without Allogene's consent.

(g) Cooperation of the Parties. Each Party agrees to cooperate fully in the preparation, filing, prosecution and maintenance of Allogene Patents, Licensee Invention Patents and Joint Invention Patents under this Section 11.2 and in the obtaining and maintenance of any patent extensions, supplementary protection certificates and the like with respect thereto respectively at its own costs. Such cooperation includes, but is not limited to: (i) executing all papers and instruments, or requiring its employees or contractors, to execute such papers and instruments, so as to enable the other Party to apply for and to prosecute patent applications in any jurisdiction as permitted by this Section 11.2; and (ii) promptly informing the other Party of any matters coming to such Party's attention that may affect the preparation, filing, prosecution or maintenance of any such patent applications.

11.3 Infringement by Third Parties.

(a) Existing Allogene In-Licenses. Licensee acknowledges and agrees that (a) the rights and obligations under this Section 11.3 are subject to the rights of the Upstream Licensors set forth in the Existing Allogene In-Licenses with respect to the Allogene Patents; (b) Allogene's obligations under this Agreement only apply to the extent of Allogene's rights with respect to participation in enforcement actions under the Existing Allogene In-Licenses , and (c) it shall reasonably cooperate with Allogene to comply with the enforcement procedures set forth in the Allogene In-Licenses.

(b) Notice. In the event that either Allogene or Licensee becomes aware of any infringement or threatened infringement by a Third Party of any Allogene Patent or Joint Invention Patent, it shall notify the other Party in writing to that effect.

(c) Allogene Patents. Allogene shall have the first right, but not the obligation, to bring and control any action or proceeding with respect to infringement of any Allogene Patent (including Patents contained in any Allogene Inventions or any Platform Inventions) or any Joint Invention Patent at its own expense and by counsel of its own choice. Allogene shall keep Licensee reasonably informed of the litigation and reasonably consider Licensee's requests, suggestions, and business interests in connection with such litigation. If Allogene decides not to bring any such action or proceeding with respect to infringement of any Allogene Protected Patent (or any Joint Invention Patent) within [***] days following the written notice of alleged infringement, Licensee shall have the right to bring and control any such action at its own expense and by counsel of its own choicebut only to the extent such infringement is in the Field and the Licensee Territory, and Allogene shall have the right, at its own expense, to be represented in any such action by counsel of its own choice. Licensee shall keep Allogene reasonably informed of the litigation and reasonably consider Allogene's requests and suggestions regarding the litigation. Likewise if any inter partes review or other action alleging invalidity, unenforceability or noninfringement of any of the Allogene Protected Patents or Joint Invention Patents shall be brought against Allogene or Licensee (whether as an independent action or as a counterclaim of a suit filed by Allogene or Licensee above in this Section 11.3(c)) in the Licensee Territory, then Allogene, at its sole option, shall have the right, [***] days after the commencement of such action, to take or regain control of the action at its own expense. If Allogene shall determine not to exercise this right, then Licensee may take over or remain as lead counsel for the action at its sole discretion and expense. The provisions of this Section 11.3(c) are subject to, if any, the rights of Allogene's Upstream Licensors with respect to the Products, whether in or outside the Field and whether in the Licensee Territory or the Allogene Territory.

(d) Licensee Invention Patents. Licensee shall have the first right, but not the obligation, to bring and control any action or proceeding with respect to infringement of any Licensee Invention Patent at its own expense and by counsel of its own choice.

(e) Cooperation; Award. In the event a Party brings an infringement action in accordance with this Section 11.3, the other Party shall cooperate fully, including, if required to bring such action, the furnishing of a power of attorney or being named as a party. Neither Party shall enter into any settlement or compromise of any action under this Section 11.3 which would in any manner alter, diminish, or be in derogation of the other Party's rights under this Agreement without the prior written consent of such other Party, which shall not be unreasonably withheld. Except as otherwise agreed by the Parties in connection with a cost-sharing arrangement, any recovery realized by a Party as a result of any action or proceeding pursuant to this Section 11.3, whether by way of settlement or otherwise, shall be applied first to reimburse the Parties' documented out-of-pocket legal expenses relating to the action or proceeding, and, of the remaining amount, [***].

11.4 Infringement of Third Party Rights. Each Party shall promptly notify the other in writing of any allegation by a Third Party that the activity of either Party pursuant to this Agreement infringes or may infringe the intellectual property rights of such Third Party in the Field in the Licensee Territory. Neither Party shall have the right to settle any patent infringement litigation under this Section 11.4 in a manner that diminishes the rights or interests of the other Party in its respective territory without the written consent of such other Party (which shall not be unreasonably withheld).

11.5 Marking. To the extent required by law, Licensee shall, and shall cause its Affiliates and their Sublicensees to, mark the Products sold under this Agreement with the number of each issued Allogene Patent that applies to the Products.

11.6 Patent Listings. With respect to each Product, the Parties shall cooperate in good faith to determine and make all patent listings with Regulatory Authorities or other governmental authorities in the Licensee Territory. Each of Allogene and Licensee shall, or shall cause its Affiliates to (a) provide to the other Party all Information that is necessary or reasonably useful to enable making such filing with Regulatory Authorities or other governmental authorities in the Licensee Territory and (b) cooperate with the other Party in connection therewith, including meeting any submission deadlines.

11.7 Common Interest. All Information exchanged between the Parties regarding the prosecution, maintenance, enforcement and defense of Patents under this Article 11 will be deemed to be Confidential Information of the Party that Controls the Patent or has licensed rights to the Patent to the other Party. In addition, the Parties acknowledge and agree that, with regard to such prosecution, maintenance, enforcement and defense, the interests of the Parties as collaborators, licensors or licensees are to, for their mutual benefit, obtain patent protection and plan patent defense against potential patentability/invalidity challenges or infringement activities by Third Parties, and as such, are aligned and are legal in nature. Each Party agrees and acknowledges that it has not waived, and nothing in this Agreement constitutes a waiver of, any legal privilege concerning Patents under this Article 11, including privilege under the common interest doctrine and similar or related doctrines. Notwithstanding anything to the contrary in this Agreement, to the extent a Party has a good faith belief that any Information required to be disclosed by such Party to the other Party under this Article 11 is protected by attorney-client privilege or any other applicable legal privilege or immunity, such Party shall not be required to disclose such Information and the Parties shall in good faith cooperate to agree upon a procedure (which may include entering into a specific common interest agreement, disclosing such Information on a "for counsel eyes only" basis or similar procedure) under which such Information may be disclosed without waiving or breaching such privilege or immunity.

Article 12
Term; Termination

12.1 Term. The term of this Agreement (the "***Term***") shall commence on the Effective Date, and unless terminated earlier as provided in this Article 12, shall expire on a

jurisdiction-by-jurisdiction and Product-by-Product basis, upon the expiration of Royalty Term with respect to such Product and such jurisdiction. In addition, at any time during the Term, Licensee may, at its convenience, terminate this Agreement on a Product-by-Product basis, immediately [***] days' prior written notice to Allogene.

12.2 Termination.

(a) Material Breach. A Party shall have the right to terminate this Agreement upon written notice to the other Party if such other Party is in material breach of this Agreement and has not cured such breach within [***] days after notice from the terminating Party requesting cure of the breach. Any such termination shall become effective at the end of such [***] day period unless the breaching Party has cured such breach prior to the end of such period. Notwithstanding anything herein to the contrary, in the event that Licensee fails to fulfill its diligence obligations under Section 3.1 (and does not cure such failure as provided in this Section 13.3(a) or dispute such failure in good faith), Allogene's sole and exclusive remedy shall be to terminate this Agreement as provided in this Section 13.3(a) on a Product-by-Product basis, as applicable to such failure.

(b) Patent Challenge. Allogene shall have the right to terminate this Agreement upon [***] days prior written notice to Licensee if Licensee or any of its controlled Affiliates or Sublicensees, directly or indirectly through any Third Party, commences any interference or opposition proceeding with respect to, challenges the validity or enforceability of, or opposes any extension of, or the grant of a supplementary protection certificate with respect to, any Allogene Patent, which termination shall become effective only if such proceeding, challenge, or opposition is successfully discontinued within such [***] day period, or if Licensee terminates it sublicense agreement with the applicable Sublicensee within such [***] day period.

(c) Bankruptcy. A Party shall have the right to terminate this Agreement upon written notice to the other Party upon the bankruptcy, dissolution or winding up of such other Party, or the making or seeking to make or arrange an assignment for the benefit of creditors of such other Party, or the initiation of proceedings in voluntary or involuntary bankruptcy against such other Party, or the appointment of a receiver or trustee of such other Party’s property that is not discharged within [***] days.

(d) Termination of the Shareholders’ Agreement. This Agreement shall terminate upon termination of the Shareholders’ Agreement unless the Shareholders’ Agreement is terminated as a result of an initial public offering of Licensee.

(e) Dispute. Any dispute regarding an alleged material breach of this Agreement shall be resolved in accordance with Article 14 hereof. Notwithstanding anything to the contrary contained in Section 12.3 or elsewhere in the Agreement, the applicable cure period for any alleged material breach that is in dispute shall be tolled from the date that the alleged breaching Party notifies the other Party that it intends to dispute the allegation through the resolution of such dispute pursuant to Article 14 and it is understood and acknowledged that, during the pendency of a dispute pursuant to Article 14, all of the terms and conditions of this

Agreement shall remain in effect, and the Parties shall continue to perform all of their respective obligations under this Agreement.

12.3 Effect of Expiration or Termination.

(a) Effect of Expiration. Upon expiration (but not earlier termination) of this Agreement and provided that Licensee has paid all undisputed payments payable under this Agreement, the license grant set forth in Section 2.1 shall survive on a fullypaid, royaltyfree (other than any payments or royalties that may be due under any Existing Allogene In-Licenses), irrevocable, perpetual basis, and all other rights and obligations of the Parties under this Agreement shall terminate, except as provided elsewhere in this Section 12.2(e) or in Section 12.4.

(b) Effect of Termination. Upon any termination of this Agreement, the license grant set forth in Section 2.1 (in applicable part, in the case of any partial termination by Product) shall automatically terminate and revert to Allogene, and all other corresponding rights and obligations of the Parties under this Agreement shall terminate, except as provided elsewhere in this Section 12.2(e) or in Section 12.4.

(c) Additional Effects of Termination. Upon any termination of this Agreement, except termination of this Agreement by Licensee under Section 12.2(a), the following provisions shall apply:

(i) Licensee shall, and it hereby does, effective as of such termination, grant to Allogene an exclusive, royalty-free, fully-paid, irrevocable, perpetual license, with the right to sublicense through multiple tiers of sublicense, under the Licensee Technology, solely to research, develop, have developed, use, have used, make, have made, manufacture, have manufactured, import, have imported, export, have exported, sell, have sold, offer for sale, promote, market and distribute the Products.

(ii) Licensee shall, and it hereby does, effective as of such termination, assign to Allogene all of Licensee's right, title and interest in and to any and all Product-specific trademarks used by Licensee and its Affiliates in the Licensee Territory (if any), including all goodwill therein, and Licensee shall promptly take such actions and execute such instruments, assignments and documents as may be necessary to effect, evidence, register and record such assignment, at Allogene's cost.

(iii) As promptly as practicable (and in any event within [***] days) after such termination, Licensee shall: (A) to the extent not previously provided to Allogene, deliver to Allogene true, correct and complete copies of all regulatory filings and registrations (including Regulatory Approvals) for the Products in the Field in the Licensee Territory, and disclose to Allogene all Licensee Know-How (including all preclinical and clinical data) not previously disclosed to Allogene; (B) transfer or assign, or cause to be transferred or assigned, to Allogene or its designee (or to the extent not so assignable, take all reasonable actions to make available to Allogene or its designee the benefits of) (1) all regulatory filings and registrations (including Regulatory Approvals) for the Products in the Field in the Licensee Territory, whether

held in the name of Licensee or its Affiliate, and (2) all data generated by or on behalf of Licensee or its designee while conducting Development or Commercialization activities under the Agreement to Allogene or its designee, including non-clinical and clinical studies conducted by or on behalf of Licensee on Products and all pharmacovigilance data (including all adverse event database information) on Products; and (C) take such other actions and execute such other instruments, assignments and documents as may be necessary to effect, evidence, register and record the transfer, assignment or other conveyance of rights under this Section 12.3(c)(iii) to Allogene.

(iv) Transition Assistance. Licensee shall, and shall cause its Affiliates and Sublicensees, to provide assistance, at no cost to Allogene, as may be reasonably necessary or useful for Allogene or its designee to commence or continue Developing or Commercializing Products in the Licensee Territory for a period of at least [***] days after the effective date of such termination (the "***Transition Period***") to the extent Licensee is then performing or having performed such activities, including transferring or amending as appropriate, upon request of Allogene, any agreements or arrangements with Third Party to Develop and Commercialize the Products in the Licensee Territory. To the extent that any such contract between Licensee and a Third Party is not assignable to Allogene or its designee, then Licensee shall reasonably cooperate with Allogene to arrange to continue to and provide such services from such entity.

(v) Ongoing Clinical Trial. If at the time of such termination, any Clinical Trials for the Products are being conducted by or on behalf of Licensee, then, at Allogene's election, cost, and expense, on a Clinical Trial-by-Clinical Trial basis: (1) Licensee shall, and shall use Commercially Reasonable Efforts to cause its Affiliates and Sublicensees to, (A) continue to conduct such Clinical Trial during the Transition Period or another period of time as determined by Licensee after the effective date of such termination at Allogene's cost, and (B) after such period, to (y) fully cooperate with Allogene to transfer the conduct of all such Clinical Trial to Allogene or its designee or (z) continue to conduct such Clinical Trials, at Allogene's cost, for so long as necessary to enable such transfer to be completed without interruption of any such Clinical Trials. In all cases, Allogene shall assume any and all liability and costs for such Clinical Trial after the effective date of such termination, and (2) Licensee shall, and shall cause its Affiliates and Sublicensees to, at Allogene's sole cost and expense, orderly wind down the conduct of any such Clinical Trial which is not assumed by Allogene under clause (1).

(vi) Inventory. At Allogene's election and request, (1) Licensee shall transfer to Allogene or its designee all inventory of the Product (including all final Products as supplied by Allogene) then in possession or control of Licensee, its Affiliates or Sublicensees; provided that Allogene shall pay Licensee a price equal to [***] percent ([***]%) of Licensee's costs for such Products or (2) (A) Licensee may continue to Commercialize all inventory of the Products then in possession or control of Licensee during the Transition Period and make the corresponding payments, including any milestone payments or royalties to Allogene under this Agreement as though this Agreement had not been terminated, and (B) after the Transition Period, Licensee shall transfer to Allogene or its designee any remaining inventory of the

Product to Allogene or its designee at a price equal to [***] percent ([***]%) of Licensee's costs for such Product.

(d) Confidential Information. Upon expiration or termination of this Agreement in its entirety, except to the extent that a Party retains a license from the other Party as provided in this Article 12, each Party shall promptly return to the other Party, or delete or destroy, all relevant records and materials in such Party's possession or control containing Confidential Information of the other Party; provided that such Party may keep one copy of such materials for archival purposes only subject to a continuing confidentiality obligations.

(e) Other Remedies. Termination or expiration of this Agreement for any reason shall not constitute a waiver or release of, or otherwise be deemed to prejudice or adversely affect, any rights, remedies or claims, whether for damages or otherwise, that a Party may have hereunder or that may arise out of or in connection with such termination or expiration. Without limiting the foregoing, any termination of this Agreement shall be in addition to, and shall not prejudice, the Parties' remedies at law or in equity, including the Parties' ability to receive legal damages or equitable relief with respect to any breach of this Agreement, regardless of whether or not such breach was the reason for the termination.

12.4 Accrued Obligations; Survival. Neither expiration nor any termination of this Agreement shall relieve either Party of any obligation or liability accruing prior to such expiration or termination, nor shall expiration or any termination of this Agreement preclude either Party from pursuing all rights and remedies it may have under this Agreement, at law or in equity, with respect to breach of this Agreement. In addition, the Parties' rights and obligations under Sections 3.9, 11.1, 12.3, 12.4 and 12.5 and Articles 1, 8 (to the extent necessary to satisfy payment obligations outstanding as of the effective date of termination), 9, 13, 14 and 15 of this Agreement shall survive expiration or any termination of this Agreement.

12.5 Termination Press Releases. In the event of termination of this Agreement for any reason and subject to the provisions of this Article 12, the Parties shall cooperate in good faith to coordinate public disclosure of such termination and the reasons therefor, and shall not, except to the extent required by Applicable Laws, disclose such information without the prior approval of the other Party. The principles to be observed in such disclosures shall be accuracy, compliance with Applicable Laws and regulatory guidance documents, and reasonable sensitivity to potential negative investor reaction to such news.

12.6 Rights Upon Bankruptcy. All rights and licenses granted under or pursuant to this Agreement are, and shall otherwise be deemed to be, for purposes of Section 365(n) of Title 11 of the United States Code and other similar laws in any jurisdiction outside the U.S. (collectively, the "***Bankruptcy Laws***"), licenses of rights to be "intellectual property" as defined under the Bankruptcy Laws. If a case is commenced during the Term by or against a Party under the Bankruptcy Laws then, unless and until this Agreement is rejected as provided in such Bankruptcy Laws, such Party (in any capacity, including debtor-in-possession) and its successors and assigns (including a trustee) shall perform all of the obligations provided in this Agreement to be performed by such Party. If a case is commenced during the Term by or against a Party under the Bankruptcy Laws, this Agreement is rejected as provided in the Bankruptcy Laws and the

other Party elects to retain its rights hereunder as provided in the Bankruptcy Laws, then the Party subject to such case under the Bankruptcy Laws (in any capacity, including debtor-in-possession) and its successors and assigns (including a Title 11 trustee), shall provide to the other Party copies of all Information necessary for such other Party to prosecute, maintain and enjoy its rights under the terms of this Agreement promptly upon such other Party's written request therefor. All rights, powers and remedies of the non-bankrupt Party as provided herein are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at law or in equity (including, without limitation, the Bankruptcy Laws) in the event of the commencement of a case by or against a Party under the Bankruptcy Laws.

12.7 Option to Continue In-Lieu of Termination for Serious Material Breach. If Licensee has the right to terminate this Agreement under Section 12.2(a) as a result of any Serious Material Breach that has not been cured in accordance with Section 12.2(a), it may elect (at its sole discretion) not to exercise such termination right and instead to exercise the alternative remedy set forth in this Section 12.7 by providing written notice of such election to Allogene within [***] days following the end of the cure period specified in Section 12.2(a). If Licensee provides such written notice, this Agreement shall continue in full force and effect, except as follows:

(a) Payments. Without limiting Licensee's other remedies hereunder, any milestone or royalty payment under Article 8 that becomes due thereafter shall be reduced by [***] percent ([***]%) after applying all other applicable deductions and reductions to such payments permitted under this Agreement;

(b) Certain Rights and Obligations. Licensee's diligence obligations under Article 3 (Development) and Article 6 (Commercialization) (Diligence), and its obligation to provide reports, updates and other information under those Articles, shall cease immediately; and

(c) Reasonable Remedies. The Parties acknowledge and agree that the remedies set forth in this Section 12.7 are reasonable remedies, in lieu of Licensee's exercise of its termination right, for the occurrence of any of the circumstances for which Licensee has the right to terminate this Agreement under Section 12.2(a).

Article 13
Indemnification

13.1 Indemnification of Allogene. Licensee shall indemnify and hold harmless each of Allogene, each Upstream Licensor, their respective Affiliates, and their respective directors, officers, employees, consultants, agents and successors and assigns of any of the foregoing (the "***Allogene Indemnitees***") from and against any and all losses, damages, liabilities, expenses and costs, including reasonable legal expense and attorneys' fees that are payable to an un-Affiliated Third Party ("***Losses***"), and which are incurred by any Allogene Indemnitee as a result of any claims, demands, actions, suits or proceedings brought by a Third Party ("***Third Party Claims***") arising directly or indirectly out of: (a) the practice by Licensee or its Affiliates or Sublicensees of

the license grant pursuant to Section 2.1; (b) the research, Development, Manufacture, testing, importation, Commercialization, use, handling, storage, sale, offer for sale or other disposition or exploitation of the Compound, Subject Antibodies, Subject Antibody Materials, or the Products by Licensee or its Affiliates, Sublicensees or permitted subcontractors (including product liability and intellectual property infringement claims); (c) the negligence or willful misconduct of any Licensee Indemnitee; (d) any breach of any of the terms of this Agreement, including the representations, warranties or covenants by Licensee under this Agreement; (e) Allogene holding any Regulatory Approval for any Product for Licensee's benefit in accordance with Section 4.1, or (f) violation of Applicable Law by Licensee or any of its Affiliates or permitted subcontractors or Sublicensees in the exercise of the license grant set forth in Section 2.1 or otherwise in connection with this Agreement; except, (g) in each case, to the extent such that such Third Party Claim alleges any infringement, misappropriation, or other violation of the Third Party's rights in Patents, Know-How, or other intellectual or proprietary rights, or that such Third Party Claims fall within the scope of the indemnification obligations of Allogene set forth in Section 13.2 or as set forth in any of the Supply and Quality Agreements.

13.2 Indemnification of Licensee. Allogene shall indemnify and hold harmless each of Licensee and its Affiliates and Sublicensees, and their respective directors, officers, employees, consultants, agents and successors and assigns of any of the foregoing (the "***Licensee Indemnitees***"), from and against any and all Losses incurred by any Licensee Indemnitee as a result of any Third Party Claims arising directly or indirectly out of: (a) the practice by Allogene or its Affiliates of the license granted to Allogene under Section 2.6; (b) the development, manufacture, use, handling, storage, sale or other disposition of the Compounds, 647 Compounds, 647 Products or Products by Allogene or its Affiliates; (c) the negligence or willful misconduct of any Allogene Indemnitee; or (d) any breach of any representations, warranties or covenants by Allogene under this Agreement; except, in each case, to the extent such Third Party Claims fall within the scope of the indemnification obligations of Licensee set forth in Section 13.1.

13.3 Procedure. As conditions to the Indemnitees' right to receive indemnification under this Article 13, a Allogene Indemnitee or Licensee Indemnitee that intends to claim indemnification under this Article 13 (the "***Indemnitee***") shall (a) promptly notify the indemnifying Party (the "***Indemnitor***") in writing of any Third Party Claim, in respect of which the Indemnitee intends to claim such indemnification (provided that failure to notify the Indemnitor shall not relieve the Indemnitor of its obligation to indemnify hereunder unless such failure materially prejudices such Indemnitor's rights), (b) reasonably cooperate, and cause the applicable individual Indemnitees to cooperate, with Indemnitor in the defense, settlement or compromise of such Third Party Claim, and (c)permit the Indemnitor to have sole control of the defense, settlement or compromise of such Third Party Claim, including the right to select defense counsel. In no event, however, may the Indemnitor compromise or settle any Third Party Claim in a manner which admits fault or negligence on the part of Indemnitee without the prior written consent of the Indemnitee. The Indemnitee shall not have any liability under this Article 13 with respect to Third Party Claims settled or compromised without its prior written consent, such consent not to be unreasonably withheld, conditioned or delayed.

13.4 Insurance. Each Party shall maintain during the Term and for a period of [***] years thereafter, product liability and clinical trial insurance, when applicable, which are generally consistent with normal business practices of prudent companies similarly situated as determined in good faith by such Party; provided, however, that in no event shall such product liability insurance be written and in force in amounts less than [***] per claim, or such greater amount as such Party customarily obtains in connection with its product candidates that are not Products. Upon request, each Party shall provide the other Party with a certificate of insurance evidencing the coverage required under this Section 13.4. Each Party shall provide the other Party with written notice of cancellation, non-renewal or material change in such insurance, and shall provide such notice within [***] days after any such cancellation, nonrenewal or material change. Licensee shall impose substantially similar obligations on its Affiliates (to the extent not named insureds under Licensee's coverages) and Sublicensees. If Licensee or Allogene becomes, or Licensee's Sublicensee is, a global pharmaceutical company that is self-insured generally and consistently across its business and product portfolio against liability and other risks associated with its activities and obligations under this Agreement in such amounts and on such terms as are customary for prudent practices for global pharmaceutical companies, Licensee, Allogene, or such Sublicensee may substitute, upon written notice to Allogene or Licensee, as applicable,, such program of self-insurance for the insurance policies otherwise required under this Section 13.4. It is understood and agreed that the insurance or self-insurance provided under this Section 13.4 shall not be construed to limit either Party's liability with respect to its indemnification or other obligations hereunder.

13.5 Limitation of Liability. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR INDIRECT DAMAGES ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 13.5 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF ANY PARTY UNDER SECTION 13.1 OR 13.2, OR DAMAGES AVAILABLE FOR A PARTY'S BREACH OF ITS CONFIDENTIALITY OBLIGATIONS IN SECTION 9.

Article 14
Dispute Resolution

14.1 Disputes. Subject to Section 14.3, upon the written request of either Party to the other Party, any claim, dispute, or controversy as to the breach, enforcement, interpretation or validity of this Agreement (a "***Dispute***") will be referred to the Executive Officers for attempted resolution. In the event such executives are unable to resolve such Dispute within [***] days after the initial written request, then, upon the written demand of either Party, the Dispute shall be subject to arbitration, as provided in Section 14.2, except as expressly set forth in Section 14.3.

14.2 Arbitration.

(a) Claims. Subject to Section 14.3 below, any Dispute that is not resolved under Section 14.1 within [***] days after a Party's initial written request for resolution, shall be resolved by final and binding arbitration before a panel of three neutral experts with relevant industry experience. The arbitration proceeding shall be administered by the International Court of Arbitration of the International Chamber of Commerce (the "***ICC***") in accordance with its then existing arbitration rules or procedures regarding commercial or business disputes, and the panel of arbitrators shall be selected in accordance with such rules. The arbitration and all associated discovery proceedings and communications shall be conducted in English, and the arbitration shall be held in New York. Except to the extent necessary to confirm an award or as may be required by law, neither a Party nor an arbitrator may disclose the existence, content, or results of arbitration without the prior written consent of both Parties.

(b) Arbitrators' Award. The arbitrators shall, within [***] days after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The decision or award rendered by the arbitrators shall be final and non-appealable, and judgment may be entered upon it in any court of competent jurisdiction. Either Party may apply for interim injunctive relief with the arbitrators until the arbitration award is rendered or the controversy is otherwise resolved. The arbitrators shall be authorized to award compensatory damages, but shall not be authorized (i) to award non-economic damages, (ii) to award punitive damages or any other damages expressly excluded under this Agreement, or (iii) to reform, modify or materially change this Agreement or any other agreements contemplated hereunder; provided, however, that the damage limitations described in subsections (i) and (ii) of this sentence will not apply if such damages are statutorily imposed.

(c) Costs. Each Party shall bear its own attorney's fees, costs, and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the arbitrator; *provided, however,* that the arbitrator shall be authorized to determine whether a Party is the prevailing party, and if so, to award to that prevailing party reimbursement for any or all of its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, photocopy charges, travel expenses, etc.), and/or the fees and costs of the ICC and the arbitrator.

14.3 Court Actions. Nothing contained in this Agreement shall deny either Party the right to seek, upon good cause, injunctive or other equitable relief from a court of competent jurisdiction in the context of an emergency or prospective irreparable harm, and such an action may be filed and maintained notwithstanding any ongoing dispute resolution discussions or arbitration proceedings. In addition, either Party may bring an action in any court of competent jurisdiction to resolve disputes pertaining to the validity, construction, scope, enforceability, infringement or other violations of Patents or other intellectual property rights, and no such claim shall be subject to arbitration pursuant to Section 14.2.

Article 15
Miscellaneous

15.1 Governing Law. This Agreement and any disputes, claims, or actions related thereto shall be governed by and construed in accordance with the laws of the State of New York, without regard to the conflicts of law provisions thereof.

15.2 Entire Agreement; Amendment. This Agreement, including the Exhibits hereto, together with the Development Plan, Commercialization Plan, and Supply and Quality Agreements, sets forth all of the agreements and understandings between the Parties with respect to the subject matter hereof and thereof, and supersedes and terminates all prior agreements and understandings between the Parties with respect to the subject matter hereof and thereof. There are no other agreements or understandings with respect to the subject matter hereof, either oral or written, between the Parties. Except as expressly set forth in this Agreement, no subsequent amendment, modification or addition to this Agreement shall be binding upon the Parties unless reduced to writing and signed by the respective authorized officers of the Parties.

15.3 Relationship Between the Parties. The Parties' relationship, as established by this Agreement, is solely that of independent contractors. This Agreement does not create any partnership, joint venture or similar business relationship between the Parties. Neither Party is a legal representative of the other Party, and neither Party can assume or create any obligation, representation, warranty or guarantee, express or implied, on behalf of the other Party for any purpose whatsoever.

15.4 Non-Waiver. The failure of a Party to insist upon strict performance of any provision of this Agreement or to exercise any right arising out of this Agreement shall neither impair that provision or right nor constitute a waiver of that provision or right, in whole or in part, in that instance or in any other instance. Any waiver by a Party of a particular provision or right shall be in writing, shall be as to a particular matter and, if applicable, for a particular period of time and shall be signed by such Party.

15.5 Assignment. Except as expressly provided hereunder, neither this Agreement nor any rights or obligations hereunder may be assigned or otherwise transferred by Allogene or Licensee without the prior written consent of the other Party, except that, without consent: Allogene may assign its rights to receive payments due under this Agreement; and either Party may assign this Agreement (and all of its rights and obligations hereunder) to any of its Affiliates or to any successor to all or substantially all of its business which concerns this Agreement (whether by sale of assets or equity, merger, consolidation, reorganization or otherwise). The rights and obligations of the Parties under this Agreement shall be binding upon and inure to the benefit of the successors and permitted assigns of the Parties, and the name of a Party appearing herein will be deemed to include the name of such Party's successors and permitted assigns to the extent necessary to carry out the intent of this Section 15.5. Any assignment not in accordance with this Agreement shall be void.

15.6 No Third Party Beneficiaries. This Agreement is neither expressly nor impliedly made for the benefit of any party other than those executing it; provided, however, that

Upstream Licensor 1 is a third-party beneficiary of this Agreement solely for purposes of Sections 13.1 and 13.4.

15.7 Severability. If, for any reason, any part of this Agreement is adjudicated invalid, unenforceable or illegal by a court of competent jurisdiction, such adjudication shall not affect or impair, in whole or in part, the validity, enforceability or legality of any remaining portions of this Agreement. All remaining portions shall remain in full force and effect as if the original Agreement had been executed without the invalidated, unenforceable or illegal part. The Parties shall use their commercially reasonable efforts to replace the invalid, illegal or unenforceable provision(s) with valid, legal and enforceable provision(s) in a way that, to the extent practicable and legally permissible, implements the original intent of the Parties.

15.8 Notices. Any notice to be given under this Agreement must be in writing and delivered either in person, by any method of mail (postage prepaid) requiring return receipt, or by overnight courier confirmed thereafter by any of the foregoing, to the Party to be notified at its address(es) given below, or at any address such Party has previously designated by prior written notice to the other. Notice shall be deemed sufficiently given for all purposes upon the earliest of: (a) the date of actual receipt; or (b) if delivered by overnight courier, [***] Business Days after delivery.

if to Allogene:	210 E. Grand Avenue South San Francisco, CA 94080 Attention: General Counsel Telephone: 650-457-2700 E-mail: [***]
with a copy (which shall not constitute notice) to:	Goodwin Procter LLP Edinburgh Tower, 38th Floor The Landmark 15 Queen's Road Central Hong Kong Attention: Wenseng "Wendy" Pan, Esq. Telephone: [***] E-mail: [***]
if to Licensee:	Allogene Overland BioPharm (CY) Limited c/o Walkers Corporate Limited Cayman Corporate Centre 27 Hospital Road George Town, Grand Cayman KY1-9008, Cayman Islands Attn: Allogene Overland BioPharm (CY) Limited – The Corporate Administrator Fax: 1 (345) 949-7886
with a copy (which shall not constitute notice) to each of:	Overland Pharmaceuticals (US) Inc. John Hancock Tower 25th Floor 200 Clarendon Street Boston, MA 02116, USA Attention: Ed Zhang Email: [***] and Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP One Marina Park Drive, Suite 900 Boston, MA 02210, USA Attention: Timothy H. Ehrlich Email: [***]

15.9 Force Majeure. Each Party shall be excused from liability for the failure or delay in performance of any obligation under this Agreement by reason of any event beyond such Party's reasonable control including but not limited to acts of God, fire, flood, explosion, earthquake, or other natural forces, regional or worldwide epidemic, pandemic, quarantine, war, civil unrest, acts of terrorism, accident, destruction or other casualty. The Parties agree the effects

of the COVID-19 pandemic that is ongoing as of the Effective Date may be invoked as a Force Majeure event for the purposes of this Agreement even though the pandemic is ongoing solely to the extent those effects are not reasonably foreseeable by the Parties as of the Effective Date. Such excuse from liability shall be effective only to the extent and duration of the event(s) causing the failure or delay in performance and provided that the Party has not caused such event(s) to occur. Notice of a Party's failure or delay in performance due to force majeure must be given to the other Party within [***] days after its occurrence.

15.10 Interpretation. The headings of clauses contained in this Agreement preceding the text of the sections, subsections and paragraphs hereof are inserted solely for convenience and ease of reference only and shall not constitute any part of this Agreement, or have any effect on its interpretation or construction. All references in this Agreement to the singular shall include the plural where applicable. Unless otherwise specified, references in this Agreement to any Article shall include all Sections, subsections and paragraphs in such Article, references to any Section shall include all subsections and paragraphs in such Section, and references in this Agreement to any subsection shall include all paragraphs in such subsection. The word "including" and similar words means including without limitation. The word "or" means "and/or" unless the context dictates otherwise because the subject of the conjunction are mutually exclusive. The words "herein," "hereof" and "hereunder" and other words of similar import refer to this Agreement as a whole and not to any particular Section or other subdivision. All references to days in this Agreement shall mean calendar days, unless otherwise specified. Ambiguities and uncertainties in this Agreement, if any, shall not be interpreted against either Party, irrespective of which Party may be deemed to have caused the ambiguity or uncertainty to exist. This Agreement has been prepared in the English language and the English language shall control its interpretation. In addition, all notices required or permitted to be given hereunder, and all written, electronic, oral or other communications between the Parties regarding this Agreement shall be in the English language.

15.11 Counterparts. This Agreement may be executed in counterparts, including by transmission of facsimile or PDF copies of signature pages to the Parties or their representative legal counsel, each of which shall be deemed an original document, and all of which, together with this writing, shall be deemed one instrument.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

In Witness Whereof, the Parties hereto have duly executed this **License Agreement** as of the Effective Date.

ALLOGENE THERAPEUTICS, INC.

By: /s/ David Chang

Name: David Chang

Title: CEO and President

ALLOGENE OVERLAND BIOPHARM (CY) LIMITED

By: /s/ Ed Zhang

Name: Ed Zhang

Title: Director

Schedule 1.13

Allogene Patents

[***]

Schedule 1.49

Existing Allogene In-Licenses

[***]

Schedule 1.74

Known Third Party Obligations

[***]

Schedule 3.8

Initial Know-How Transfer

[***]

[***] Certain information in this document has been omitted from this exhibit because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

SHARE PURCHASE AGREEMENT

THIS SHARE PURCHASE AGREEMENT (this "**Agreement**") is entered into on December 14, 2020 (the "**Effective Date**") by and among:

(1) **Allogene Overland Biopharm (CY) Limited**, a company incorporated under the Laws of the Cayman Islands (the "**Company**");

(2) **Overland Pharmaceuticals (CY) Inc.**, a company incorporated under the Laws of the Cayman Islands, ("**Overland**"); and

(3) **Allogene Therapeutics, Inc.**, a corporation established under the Laws of the State of Delaware ("**ALLO**", together with Overland, the "**Purchasers**", and each a "**Purchaser**").

Each of the forgoing parties is referred to herein individually as a "**Party**" and collectively as the "**Parties**".

RECITALS

A. The Company intends to issue and sell to the Purchasers, and the Purchasers intend to subscribe for and purchase from the Company, a certain number of Seed Preferred Shares, par value US$0.0001 per share, of the Company (the "**Seed Preferred Shares**"), pursuant to the terms and subject to the conditions of this Agreement.

B. The Parties intend to enter into this Agreement and make the respective representations, warranties, covenants and agreements set forth herein.

AGREEMENT

NOW, THEREFORE, in consideration of the foregoing recitals, the mutual promises hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. DEFINITIONS

Unless otherwise defined in this Agreement, capitalized terms used in this Agreement shall have the meanings set forth in Exhibit A.

2. TRANSACTIONS

2.1 Authorization. On or prior to the Closing, the Company shall have authorized the issuance of the Seed Preferred Shares, having the rights, preferences, privileges and restrictions set forth in the Amended and Restated Memorandum and Articles of Association of the Company in the form attached hereto as Part II of Exhibit E (the "**Memorandum and Articles**").

2.2 Sale and Purchase of Seed Preferred Shares.

(i) Subject to the terms and conditions of this Agreement, the Company agrees to issue and sell to each of the Purchasers, and each of the Purchasers agrees to, severally and not jointly, subscribe for and purchase from the Company, at the Closing, such number of Seed Preferred Shares (collectively, the "**Purchased Shares**") set forth opposite such Purchaser's name in the column titled "Number of Seed Preferred Shares" in the table set forth in Exhibit B at a purchase price of approximately US $2.2941 per share, amounting to the exact aggregate purchase price amount set forth opposite such Purchaser's name in the column titled "Consideration" in the table set forth in Exhibit B, which shall be payable by, (a) in the case of Overland, through payment of the Closing Cash at the Closing and the Quarterly Payments at each Quarterly Payment Date, and (b) in the case of ALLO, its entry into the license agreement in the form attached hereto as Part I of Exhibit E (the "**License Agreement**") with the Company upon the Closing.

(ii) Upon completion of the Closing, Overland and ALLO, respectively, shall hold not less than 51.0% and 49.0% of the total issued and outstanding share capital of the Company on a fully-diluted, as-converted basis.

3. CLOSING

3.1 Closing. Subject to the terms and conditions of this Agreement, the closing of the subscription and issuance of the Purchased Shares pursuant to Section 2.2 (the "**Closing**") shall take place remotely via the exchange of documents and signatures as soon as possible and in any event within ten (10) Business Days after the fulfillment or, to the extent permissible, waiver of the conditions to the Closing as set forth in Article 5 (other than conditions that by their nature are to be satisfied at the Closing, but subject to the satisfaction or, to the extent permissible, waiver of those conditions at the Closing), or such other time as the Company and the Purchasers shall mutually agree (the "**Closing Date**"). A capitalization table setting forth the Company's complete capital structure immediately after the Closing is set forth in Part II of Exhibit C.

3.2 Procedure.

(i) Closing Deliverables by the Company. At the Closing, the Company shall deliver (or cause to be delivered) to each Purchaser (a) a true copy of the Company's updated register of members certified by the registered office provider of the Company, reflecting the issuance of the Purchased Shares to the Purchasers at the Closing, (b) a true copy of the Company's updated register of directors certified by the registered office provider of the Company, evidencing the appointment of two (2) representatives of Overland and two (2) representatives of ALLO, (c) the original share certificate representing the Purchased Shares purchased by such Purchaser at the Closing, (d) a certificate of good standing of the Company issued by the Registrar of Companies of the Cayman Islands dated

within twenty (20) days prior to the Closing, and (d) to the extent not previously delivered, such documents, instruments and items required to be delivered in connection with the satisfaction of the applicable closing conditions under this Agreement.

(ii) Delivery of the Closing Documents. At the Closing,

(a) License Agreement. The Company and ALLO shall execute and deliver the License Agreement.

(b) Shareholders Agreement. The Parties shall execute and deliver the shareholders' agreement in the form attached hereto as Part III of Exhibit E (the "**Shareholders Agreement**").

(c) Indemnification Agreement. The Company shall duly execute and deliver an indemnification agreement with each member of the Board as of the Closing, respectively, and the Purchaser that appoints such member in the form attached hereto as Part IV of Exhibit E (the "**Indemnification Agreement**").

(iii) Closing Payment. At the Closing, Overland shall pay an amount of cash equal to US$[***] (collectively, the "**Closing Cash**") to the Company by wire transfer of immediately available funds in U.S. dollars to a bank account designated by the Company.

(iv) Quarterly Payments. At least five (5) Business Days prior to the beginning of each fiscal quarter beginning on the first fiscal quarter occurring after the first anniversary of the Closing and until the Quarterly Payment Expiration (each such date, a "**Quarterly Payment Date**") Overland shall pay to the Company by wire transfer of immediately available funds in U.S. dollars to a bank account designated by the Company (each, a "**Quarterly Payment**") an amount of cash equal to [***]. The date immediately following payment of the Quarterly Payment, which is calculated pursuant to the preceding clause (b) shall be the "**Quarterly Payment Expiration**".

(v) A [***] shall occur if Overland does not make one of its Quarterly Payments on or before [***].

4. REPRESENTATIONS AND WARRANTIES

4.1 Representations and Warranties of the Company. The Company hereby represents and warrants to each Purchaser that each of the statements contained in Part I of Exhibit D attached hereto (the "**Company Representations and Warranties**") is true, correct and complete as of the Effective Date and the Closing Date.

4.2 Representations and Warranties of Each Purchaser. Each Purchaser hereby severally and not jointly represents and warrants to the Company and the other Purchaser that each of the statements with respect to such Purchaser itself contained in Part II of Exhibit D (the "**Purchaser Representations and Warranties**") is true, correct and complete as of the Effective Date and the Closing Date.

5. CONDITIONS

5.1 Conditions to ALLO's Obligations at the Closing. The obligation of ALLO hereunder to consummate the Closing shall be subject to the fulfillment of, or waiver by ALLO of, each of the following conditions at or prior to the Closing:

(i) Representations and Warranties. The Company Representations and Warranties and the Purchaser Representations and Warranties made by Overland shall be true, correct and complete when made, and as of the Closing Date with the same force and effect as if they were made on and as of such date.

(ii) Performance of Obligations. Each of the Company and Overland shall have performed and complied with all covenants, agreements, obligations and conditions contained in the Transaction Documents that are required to be performed or complied with by it on or before the Closing.

(iii) Authorization and Proceedings. The execution, delivery and performance of the Transaction Documents to which the Company or Overland is a party shall have been duly authorized by all necessary action on the part of the Company or Overland (as applicable). All corporate and other proceedings by each of the Company and Overland in connection with the transactions contemplated under this Agreement and the other Transaction Documents shall have been completed and all documents and instruments incidental to such transactions shall have been executed, delivered, or filed, as applicable.

(iv) Approvals. Any and all Consents, including but not limited to all permits, authorizations, approvals, waivers, consents or permits of any Governmental Authority or any other person that are necessary for consummation of the transactions contemplated by the Transaction Documents, shall have been duly obtained prior to, and be in full force and effect as of, the Closing.

(v) No Prohibition. There shall not be in effect any applicable Law, Governmental Order or other oral or written determination or indication from any Governmental Authority, or other legal restraint or prohibition, prohibiting, suspending, delaying, objecting, restraining, enjoining, preventing or making illegal the consummation of the transactions contemplated under the Transaction Documents, and there shall not be any pending or threatened action by any Governmental Authority or third party seeking to prohibit, suspend, delay, object to, restrain, enjoin, prevent or make illegal the consummation of such transactions.

(vi) Memorandum and Articles. The Memorandum and Articles shall have been duly adopted by the Company by all necessary action of the Board and the shareholders of the Company and duly filed with the Registrar of Companies in the Cayman Islands, and the Memorandum and Articles shall have become effective with no amendment as of the Closing.

(vii) Board. As of the Closing, the Board shall consist of (a) two (2) directors appointed by Overland, and (b) two (2) directors appointed by ALLO.

(viii) Business Plan and Budget. Overland shall have provided to ALLO the business plan and budget of the Company (the "**Business Plan**") for the twelve-month period following the Closing to the satisfaction of ALLO.

(ix) Concurrent Closing. Overland shall consummate the Closing in accordance with this Agreement concurrently with the consummation of the Closing by ALLO in accordance with this Agreement.

(x) Closing Certificate. At the Closing, the Company shall deliver to each Purchaser a certificate dated as of the Closing, signed by one (1) director of the Company certifying (a) that the conditions specified in Section 5.1 have been fulfilled as of the Closing, (b) that the attached copies of the resolutions of the Board of the Company approving the transactions contemplated hereby are all true and complete copies and such resolutions remain unamended and in full force and effect, and (c) that the attached copies of the resolutions of the shareholder of the Company adopting the Memorandum and Articles are true and complete copies and such resolutions remain unamended and in full force and effect.

5.2 Conditions to Company's Obligations at the Closing. The obligation of the Company to consummate the Closing with respect to each Purchaser shall be subject to the fulfillment, or waiver (a) by the Company in respect of ALLO, and (b) by ALLO in respect of Overland, of each of the following conditions at or prior to the Closing:

(i) Representations and Warranties. The Purchaser Representations and Warranties of such Purchaser shall be true, correct and complete when made, and as of the Closing Date, with the same force and effect as if they were made on and as of such date.

(ii) Performance of Obligations. Such Purchaser shall have performed and complied with all covenants, agreements, obligations and conditions contained in the Transaction Documents that are required to be performed or complied with by it on or before the Closing.

(iii) Approvals. Any and all Consents, including but not limited to all permits, authorizations, approvals, waivers, consents or permits of any Governmental Authority or any other person that are necessary for consummation of the

transactions contemplated by the Transaction Documents, shall have been duly obtained prior to and be in full force and effect as of the Closing.

6. COVENANTS

6.1 Use of Proceeds. The Company covenants to the Purchasers that, unless otherwise agreed by the Purchasers in writing or under the Transaction Documents, the entire proceeds received from the sale and issuance of the Purchased Shares hereunder shall be used only for the Principal Business and general working capital needs of the Company and its Subsidiaries (including without limitation, for the performance by the Company of its obligations under the License Agreement) in accordance with the Business Plan and in accordance with any control procedures approved by the Purchasers from time to time.

6.2 Satisfaction of Conditions. The Company and Overland shall use their respective reasonable best efforts to satisfy (or cause the satisfaction of) the closing conditions as set forth in Section 5.1 as soon as practicable.

6.3 Confidentiality.

(i) Confidentiality Obligation. Each Party shall, and shall cause its Affiliates to, keep confidential (a) the existence and content of this Agreement, the other Transaction Documents and any related documentation, and (b) other information of a non-public nature received from any other Party or its Representatives, or prepared by such Party or its Representatives, exclusively in connection herewith or therewith (collectively, the "**Confidential Information**") unless in the case of (a) above, the Purchasers shall mutually agree otherwise in writing, and in the case of (b) above, the Party or Parties to which such nonpublic information relates shall consent in writing; *provided* that any Party may disclose Confidential Information or permit the disclosure of Confidential Information (A) to the extent legally compelled (including without limitation, pursuant to any applicable tax, securities, or other Laws of any jurisdiction); *provided* that such Party shall, where practicable and to the extent permitted by applicable Laws, provide the other Parties with prompt written notice of that fact, consult with the other Parties regarding such disclosure, and at the request of any other Party, seek (with the cooperation and reasonable efforts of the other Parties) a protective order, confidential treatment or other appropriate remedy; and in any event, such Party shall furnish only that portion of the information which is legally required to be disclosed and shall exercise reasonable efforts to obtain reliable assurance that confidential treatment will be accorded to such information, (B) to its Representatives, (C) in the case of a Purchaser, to its auditors, counsel, directors, officers, employees, fund manager, shareholders and partners, and (D) to its current or bona fide prospective Purchasers, investment bankers and any Person otherwise providing substantial debt or equity financing to such Party, in each case of (B) through (D) above, strictly on a need-to-know basis and only where such Party advises each Person to whom any Confidential Information is so

disclosed as to the confidential nature thereof and such Person is subject to appropriate nondisclosure obligations substantially similar to those set forth in this Section 6.3. Notwithstanding the foregoing, ALLO shall be permitted to disclose such information as required by the rules and regulations of the New York Stock Exchange and the U.S. Securities and Exchange Commission (as determined by ALLO) without being subject to the obligations in the proviso in sub-paragraph (A) above.

For the avoidance of doubt, "**Confidential Information**" does not include information that (i) was already in the possession of the receiving Party before such disclosure by the disclosing Party, (ii) is or becomes available to the public other than as a result of disclosure by the receiving Party in violation of this Section 6.3, (iii) is or becomes available to the receiving Party from a third party who has no confidentiality obligations to the disclosing Party, or (iv) was independently developed by the Representatives of the receiving Party who had no access to any Confidential Information.

(ii) Public Announcement. No announcement regarding the consummation of the transaction contemplated by this Agreement, the other Transaction Documents and any related documentation in a press release, conference, advertisement, announcement, professional or trade publication, mass marketing materials or otherwise to the general public may be made without the prior written consent of each Purchaser, except as may otherwise be required by applicable Laws or Governmental Order (including the rules and regulations of the New York Stock Exchange and the U.S. Securities and Exchange Commission). Following the execution of this Agreement, the Purchasers will issue a press release, the form and timing of which shall be agreed between the Purchasers.

6.4 Survival of Representations and Warranties and Covenants. The representations and warranties and all covenants made by each Party contained in this Agreement shall survive the Closing.

7. MISCELLANEOUS

7.1 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of New York, U.S., without giving effect to any choice of law principles that would require the application of the laws of a different jurisdiction. The application of the U.N. Convention on Contracts for the International Sale of Goods is excluded.

7.2 Binding Arbitration.

(i) All disputes under this Agreement shall be submitted by either Party for resolution in arbitration administered by the International Chamber of Commerce (the "**ICC**") pursuant to its arbitration rules and procedures then in effect.

(ii) The arbitration shall be conducted by a panel of three (3) arbitrators: within thirty (30) days after initiation of arbitration, each Party shall select one (1) person to act as arbitrator and the two Party-selected arbitrators shall select a third arbitrator (who shall be the chairperson of the arbitration panel) within thirty (30) days of their appointment. If the arbitrators selected by the Parties are unable or fail to agree upon the third arbitrator, the third arbitrator shall be appointed by ICC. If, however, the aggregate award sought by the Parties is less than US$5,000,000 and equitable relief is not sought, the arbitration shall be conducted by a single arbitrator agreed by the Parties (or appointed by ICC if the Parties cannot agree). The seat of arbitration shall be New York City, New York and the language of the proceedings shall be English.

(iii) The Parties agree that any award or decision made by the arbitral tribunal shall be final and binding upon them and may be enforced in the same manner as a judgment or order of a court of competent jurisdiction. The arbitral tribunal shall determine the dispute by applying the provisions of this Agreement and the governing law set forth in Section 7.1.

(iv) By agreeing to arbitration, the Parties do not intend to deprive any court of its jurisdiction to issue, at the request of a Party, a pre-arbitral injunction, pre-arbitral attachment or other order to avoid irreparable harm, maintain the status quo, preserve the subject matter of the dispute, or aid the arbitration proceedings and the enforcement of any award. Without prejudice to such provisional or interim remedies in aid of arbitration as may be available under the jurisdiction of a competent court, the arbitral tribunal shall have full authority to grant provisional or interim remedies and to award damages for the failure of any party to the dispute to respect the arbitral tribunal's order to that effect.

(v) EACH PARTY HERETO WAIVES ITS RIGHT TO TRIAL BY JURY OF ANY ISSUE RELATING TO ANY DISPUTE ARISING HEREUNDER.

(vi) Each Party shall bear its own attorney's fees, costs, and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the administrator and the arbitrator; *provided*, *however*, the arbitrator shall be authorized to determine whether a Party is the prevailing party, and if so, to award to that prevailing party reimbursement for any or all of its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, photocopy charges, travel expenses, etc.), or the fees and costs of the administrator and the arbitrator.

7.3 Notices. All notices which are required or permitted hereunder shall be in writing and sufficient if delivered personally, sent by facsimile (and promptly confirmed by personal delivery, registered or certified mail or overnight courier), sent by nationally-recognized overnight courier or sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

If to the Company:

c/o Walkers Corporate Limited
Cayman Corporate Centre
27 Hospital Road
George Town, Grand Cayman
KY1-9008, Cayman Islands
Attn: Allogene Overland Biopharm (CY) Limited – The Corporate Administrator
Fax: 1(345) 949-7886

If to Overland:

John Hancock Tower
25th Floor
200 Clarendon Street
Boston, MA 02116
Attn: Ed Zhang

with a copy to:

Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP
One Marina Park Drive, Suite 900
Boston, MA 02210
Attn: Timothy H. Ehrlich
Email: [***]

If to ALLO:

Address:
Allogene Therapeutics, Inc.
210 East Grand Avenue
South San Francisco, CA 94080
Attn: General Counsel
Email: [***]

with a copy to:

Address:
Goodwin Procter LLP
The New York Times Building
620 8th Avenue
New York, NY 10018
Attn: Wendy Pan
Email: [***]

or to such other address as the Party to whom notice is to be given may have furnished to the other Party in writing in accordance herewith. Any such notice shall be deemed to have been given: (a) when delivered if personally delivered or sent by facsimile on a Business Day; (b) on the Business Day after dispatch if sent by internationally-recognized overnight courier; or (c) on the fifth Business Day following the date of mailing if sent by mail.

7.4 Successors and Assigns. Except as otherwise provided herein, the terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the Parties. This Agreement, and the rights and obligations hereunder, shall not be assigned without the mutual written Consent of the Purchasers and the Company; *provided* that each Purchaser may assign its rights and obligations to its Affiliate (in the case of Overland, only to a wholly-owned Affiliate of Overland) without the Consent of the other Parties under this Agreement.

7.5 Severability. In case any provision of the Agreement shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected thereby. If, however, any provision of this Agreement shall be invalid, illegal, or unenforceable under any applicable Laws in any jurisdiction, it shall, as to such jurisdiction, be deemed modified to conform to the minimum requirements of such Law.

7.6 Amendment. This Agreement may only be amended or modified by an instrument in writing signed by the Company and the Purchasers.

7.7 Waiver. No waiver of any provision of this Agreement shall be effective unless set forth in a written instrument signed by the Party waiving such provision. No failure or delay by a Party in exercising any right, power or remedy under this Agreement shall operate as a waiver thereof, nor shall any single or partial exercise of the same preclude any further exercise thereof or the exercise of any other right, power or remedy. Without limiting the foregoing, no waiver by a Party of any breach by any other Party of any provision hereof shall be deemed to be a waiver of any subsequent breach of that or any other provision hereof.

7.8 Further Assurances. Each Party shall from time to time and at all times hereafter make, do, execute, or cause or procure to be made, done and executed such further acts, deeds, conveyances, consents and assurances without further consideration, which may reasonably be required to effect the transactions contemplated by this Agreement.

7.9 Fees and Expenses. Each of the Company and the Purchasers shall pay all of its own costs and expenses incurred in connection with the negotiation, execution, delivery and performance of this Agreement and other Transaction Documents and the transactions contemplated hereby and thereby.

7.10 Interpretation. For all purposes of this Agreement, except as otherwise expressly provided, (a) the defined terms shall have the meanings assigned to them in their

definitions and include the plural as well as the singular, and pronouns of either gender or neuter shall include, as appropriate, the other pronoun forms, (b) all references in this Agreement to designated sections and other subdivisions are to the designated sections and other subdivisions of the body of this Agreement, and all references in this Agreement to designated exhibits are to the exhibits attached to this Agreement, (c) the words "herein", "hereof", and "hereunder" and other words of similar import refer to this Agreement as a whole and not to any particular section or other subdivision, (d) the titles of the sections and subdivisions of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement, (e) any reference in this Agreement to any "Party" or any other Person shall be construed so as to include its successors in title, permitted assigns and permitted transferees, (f) any reference in this Agreement to any agreement or instrument is a reference to that agreement or instrument as amended or novated, (g) the disjunctive shall be deemed to include the conjunctive, (h) "including" shall be deemed read to include "without limitation", and (i) this Agreement is jointly prepared by the Parties and should not be interpreted against any Party by reason of authorship.

7.11 Entire Agreement. This Agreement and the other Transaction Documents constitute the entire agreement of the Parties with respect to the subject matter hereof and thereof and supersede all prior agreements and undertakings, both written and oral, among the Parties with respect to the subject matter hereof and thereof.

7.12 Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Facsimile and e-mailed copies of signatures shall be deemed to be originals for purposes of the effectiveness of this Agreement.

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IN WITNESS WHEREOF, the Parties have duly executed this Share Purchase Agreement as of the date first above written.

Overland Pharmaceuticals (CY) Inc.

By: /s/ Ed Zhang
Name: Ed Zhang
Title: Chief Operating Officer and Chief Business Officer

SIGNATURE PAGE OF SHARE PURCHASE AGREEMENT

IN WITNESS WHEREOF, the Parties have duly executed this Share Purchase Agreement as of the date first above written.

Overland Pharmaceuticals (CY) Inc.

By: /s/ Ed Zhang
Name: Ed Zhang
Title: Chief Operating Officer and Chief Business Officer

IN WITNESS WHEREOF, the Party has duly executed this Share Purchase Agreement as of the date first above written.

Allogene Therapeutics, Inc.

By: /s/ David Chang
Name: David Chang
Title: CEO and President

SIGNATURE PAGE OF SHARE PURCHASE AGREEMENT

EXHIBIT A

DEFINITIONS

"**Affiliate**"	means, with respect to any Person, (i) any other Person that, directly or indirectly, Controls, is Controlled by or is under common Control with such Person; and (ii) in the case of any individual, his spouse, child, brother, sister, parent, the immediate relatives of such spouse, trustee of any trust in which such individual or any of his immediate family members is a beneficiary object, or any entity or company Controlled by any of the aforesaid Persons.
"**Board**"	means the board of directors of the Company.
"**Business Day**"	means any day that is not a Saturday, Sunday, public holiday or other day on which commercial banks are required or authorized by Law to be closed in the People's Republic of China (mainland), Hong Kong, the Cayman Islands or the United States.
"**Consent**"	means any consent, approval, authorization, release, waiver, permit, grant, franchise, concession, license, exemption or order of, registration, certificate, declaration or filing with, or report or notice to, any Person, including any Governmental Authority.
"**Contract**"	means, a contract, agreement, undertaking, understanding, indenture, note, bond, loan, instrument, lease, mortgage, deed of trust, franchise, license, commitment, purchase order, and other legally binding arrangement, whether written or oral.
"**Control**"	means, with respect to a Person, the power or authority, whether exercised or not, to direct the business, management and policies of such Person, directly or indirectly, or by effective control whether through the ownership of voting securities or other ownership interests, by Contract or otherwise, which power or authority shall conclusively be presumed to exist upon possession of beneficial ownership or power to direct the vote of more than fifty percent (50%) of the votes entitled to be cast at a meeting of the members or shareholders of such Person or power to control the composition of more than fifty percent (50%) of the board of directors of such Person. The terms "Controlled" and "Controlling" have meanings correlative to the foregoing.
"**Equity Securities**"	means, with respect to any Person that is a legal entity, any and all shares, membership interests, units, profits interests, ownership interests, equity interests, registered share capital, and other equity securities of such Person, and any right, warrant, option, call, commitment, conversion privilege, preemptive right or other right to acquire any of the foregoing, or security convertible into, exchangeable or exercisable for any of the foregoing, or any Contract providing for the acquisition of any of the foregoing.

"**Governmental Authority**"	means any government of any nation, federation, province or state or any other political subdivision thereof, any entity, authority or body exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including any governmental authority, agency, department, board, commission or instrumentality of the People's Republic of China, Hong Kong, Macau Special Administrative Region of the People's Republic of China, islands of Taiwan, Singapore or any other country, or any political subdivision thereof, any court, tribunal or arbitrator, any self-regulatory organization and the governing body of any stock exchange.
"**Governmental Order**"	means any applicable order, ruling, decision, verdict, decree, writ, subpoena, mandate, precept, command, directive, approval, award, judgment, injunction or other similar determination or finding by, before or under the supervision of any Governmental Authority.
"**Hong Kong**"	means the Hong Kong Special Administrative Region of the People's Republic of China.
"**Law**"	means any and all provisions of any applicable constitution, treaty, statute, law, regulation, ordinance, code, rule, or rule of common law, any governmental approval, concession, grant, franchise, license, agreement, directive, requirement, or other governmental restriction or any similar form of decision of, or determination by, or any formally issued written interpretation or administration of any of the foregoing by, any Governmental Authority, in each case as amended, and any and all applicable Governmental Orders.
"**Liabilities**"	means, with respect to any Person, all debts, liabilities, obligations and commitments of such Person of any nature, whether directly or indirectly, accrued or unaccrued, absolute or contingent, known or unknown, liquidated or unliquidated, or otherwise, and whether due or to become due, including those arising under any Law, Governmental Order, legal proceeding or Contract and including all costs and expenses relating thereto.
"**Lien**"	means any claim, mortgage, charge, easement, encumbrance, lease, covenant, security interest, lien, option, pledge, rights of others, title defect, adverse claim, restrictive covenant, or other restriction or limitation of any kind whatsoever (whether on use, voting, sale, transfer, disposition, receipt of income, or exercise of any attributes of ownership or otherwise), whether imposed by contract, understanding, Law, equity or otherwise.
"**Ordinary Shares**"	means the Company's ordinary shares of par value US$0.0001 per share, with the rights, preferences, privileges and restrictions as set forth in the Memorandum and Articles.

"**Person**"	means an individual, a partnership (including a limited liability partnership), a corporation, a company, an association, a joint stock company, a limited liability company, a trust, a joint venture, a firm, a legal person, an unincorporated organization and a Governmental Authority.
"**Principal Business**"	means the development, registration and commercialization of Products (as defined in the License Agreement) in the Territory (as defined in the License Agreement).
"**Representative**"	means, with respect to any Person, any director, officer, partner, member, employee, agent, consultant, advisor or other representative of such Person, including legal counsel, accountants and financial advisors.
"**Subsidiary**"	means any corporation, partnership, limited liability company, joint stock company, joint venture or other organization or entity, whether incorporated or unincorporated, which is Controlled by the Company, including those hereafter formed or acquired, and, for the avoidance of doubt, the Subsidiaries shall include any variable interest entity over which the Company or any of its Subsidiaries effects Control pursuant to contractual arrangements and which is consolidated with the Company in accordance with generally accepted accounting principles applicable to the Company and any Subsidiaries of such variable interest entity.
"**Transaction Documents**"	means this Agreement, the Memorandum and Articles, the Shareholders Agreement, the License Agreement, the Indemnification Agreements, the exhibits attached to any of the foregoing and each of the agreements and other documents otherwise required in connection with implementing the transactions contemplated by any of the foregoing.
"**U.S.**"	means the United States of America.
"**US$**"	means the lawful currency of the United States of America.

In addition, the following terms shall have the meanings defined for such terms in the Sections or Exhibits set forth below:

"**ALLO**"	Preamble
"**Agreement**"	Preamble
"**Business Plan"**	Section 5.1(viii)
"**Closing**"	Section 3.1
"**Closing Cash**"	Section 2.2(i)
"**Closing Date**"	Section 3.1
"**Company**"	Preamble
"**Confidential Information**"	Section 6.3
"**Company Representations and Warranties**"	Section 4.1
"**Effective Date**"	Preamble
[***]	Section 3.2(v)
"**ICC**"	Section 7.2(i)
"**Indemnification Agreement**"	Section 3.2(ii)(c)
"**License Agreement**"	Section 2.2(i)
"**Memorandum and Articles**"	Section 2.1
"**Overland**"	Preamble
"**Party**" / "**Parties**"	Preamble
"**Purchased Shares**"	Section 2.2(i)
"**Purchaser**" / "**Purchasers**"	Preamble
"**Purchaser Representations and Warranties**"	Section 4.2
"**Seed Preferred Shares**"	Recital
"**Shareholders Agreement**"	Section 3.2(ii)(b)

EXHIBIT B
Purchasers

Name of Purchasers	Number of Seed Preferred Shares	Consideration
Overland	51,000,000	US$117,000,000*
ALLO	49,000,000	Non-cash consideration**

* To be paid, as set forth herein, through payment of the Closing Cash at the Closing and the Quarterly Payments at each Quarterly Payment Date.

** Shares issued as consideration for ALLO entering into the License Agreement.

EXHIBIT C
CAPITALIZATION TABLES

Part I Immediately prior to the Closing

Name of Shareholder	Class of Shares	Number of Shares	Percentage
WNL Limited	Shares	1	100.00%
Total	Shares	1	**100.00%**

Part II Immediately after the Closing

Name of Shareholder	Class of Shares	Number of Shares	Percentage
Overland	Seed Preferred Shares	51,000,000	51%
ALLO	Seed Preferred Shares	49,000,000	49%
Total	/	**100,000,000**	**100.00%**

EXHIBIT D

Part I

COMPANY REPRESENTATIONS AND WARRANTIES

1 Organization, Standing and Qualification. The Company is duly incorporated or organized, validly existing and in good standing (or equivalent status in the relevant jurisdiction) under the Laws of the jurisdiction of its incorporation or organization. The Company has all requisite capacity, power and authority to own and operate its properties and to carry on its business as now conducted and as proposed to be conducted, and is duly qualified to transact business in each jurisdiction in which it conducts and proposes to conduct business.

2 Due Authorization. All actions on the part of the Company and, as applicable, their respective officers, directors and shareholders necessary for (i) the authorization, execution and delivery of, and the performance of all obligations of the Company under this Agreement and the other Transaction Documents to which it is a party have been taken or will be taken prior to the Closing; and (ii) the authorization, issuance, reservation for issuance and delivery of all the Purchased Shares at the Closing have been obtained or will have been obtained prior to the Closing. The Company has all requisite capacity, power and authority to execute and deliver this Agreement and the other Transaction Documents to which it is a party. Each Transaction Document to which the Company is a party is a valid and binding obligation of the Company, enforceable against it in accordance with its terms, subject, as to enforcement of remedies, to applicable bankruptcy, insolvency, moratorium, reorganization and similar laws affecting creditors' rights generally and to general equitable principles.

3 Approvals. All Consents which are required to be obtained by the Company in connection with the consummation of the transactions contemplated under this Agreement and the other Transaction Documents will have been obtained prior to and be effective as of the Closing.

4 Valid Issuance. The Seed Preferred Shares, when issued, delivered and paid in accordance with the terms of this Agreement for the consideration expressed herein, will be duly and validly issued, fully paid, non-assessable, and free from any Lien. Assuming the accuracy of the representations of the Purchasers in this Agreement, the Seed Preferred Shares will be issued in compliance with all applicable Laws.

5 Capitalization.

5.1 The Company's capital structure as set forth on Part I of Exhibit C is complete, true and accurate immediately prior to the Closing Date.

5.2 Other than those set forth on Part I of Exhibit C, there are no outstanding Equity Securities of the Company. All presently outstanding Equity Securities of the Company

were, and the Purchased Shares will be, duly and validly issued (or subscribed for) in compliance with all applicable Laws and any preemptive rights (or similar requirements) of any Person, and are fully paid, non-assessable, and free from any Lien.

5.3 Except as contemplated in the Transaction Documents, there are no options, warrants, conversion privileges or other rights, or agreements with respect to the issuance thereof, presently outstanding to purchase any of the Equity Securities of the Company. Except as contemplated by the Shareholders Agreement, no shares of the Company's outstanding share capital, or shares issuable upon exercise or exchange of any outstanding options or other shares issuable by the Company, are subject to any preemptive rights, rights of first refusal or other rights to purchase such shares (whether in favor of the Company or any other Person).

6 No Assets or Liabilities. The Company is a newly-formed entity with no business operations, no contractual obligations and no assets. The Company does not have any indebtedness or liabilities of any nature, whether accrued, absolute, contingent or otherwise and whether due or yet to become due, that it has directly or indirectly created, incurred, assumed, or guaranteed, or with respect to which the Company has otherwise become directly or indirectly liable.

7 Exempt Offering. The offer and sale of the Seed Preferred Shares under this Agreement are exempt from the registration or qualification requirements of all applicable securities laws and regulations, and the issuance of Ordinary Shares upon conversion of the Seed Preferred Shares in accordance with the Memorandum and Articles will be exempt from such registration or qualification requirements.

8 No Brokers. The Company does not have any Contract with any broker, finder or similar agent with respect to the transactions contemplated by this Agreement or by any of the Transaction Documents, and none of them has incurred any Liability for any brokerage fees, agents' fees, commissions or finders' fees in connection with any of the Transaction Documents or the consummation of the transactions contemplated therein.

Part II

PURCHASER REPRESENTATIONS AND WARRANTIES

1 Due Organization. The Purchaser is duly formed, organized, validly existing and in good standing (or equivalent status in the relevant jurisdiction) under the Laws of the jurisdiction of its formation or organization.

2 Authorization. The Purchaser has all requisite power, authority and capacity to enter into this Agreement and other Transaction Documents to which it is a party, and to perform its obligations hereunder and thereunder. Each Transaction Document to which such Purchaser is a party, when executed and delivered by such Purchaser, will constitute valid and legally binding obligations of it, enforceable against it in accordance with its terms, except (a) as limited by applicable bankruptcy, insolvency, moratorium, reorganization, and other Laws of general application affecting the enforcement of creditors' rights generally and (b) as limited by Laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

3 Consents and Filings. No Consent, order or authorization of or registration, qualification, designation, declaration or filing with, any Governmental Authority or any other third parties is required on the part of any Purchaser in connection with the valid execution, delivery and consummation of the transactions contemplated by this Agreement and the Shareholders Agreement.

4 Restricted Securities. The Purchaser understands that the Purchased Shares have not been registered under the U.S. Securities Act of 1933, as amended (the "Act"), by reason of a specific exemption from the registration provisions of the Act which depends upon, among other things, the bona fide nature of the investment intent and the accuracy of such Purchaser's representations as expressed herein. The Purchaser understands that the Purchased Shares are "restricted securities" under applicable U.S. federal and state securities laws and that, pursuant to these laws, such Purchaser must hold the Purchased Shares indefinitely unless they are registered with the U.S. Securities and Exchange Commission and qualified by state authorities, or an exemption from such registration and qualification requirements is available.

5 Legend. The Purchaser understands that the Purchased Shares, and any Equity Securities issued in respect of or exchange for the Purchased Shares may bear the following legend: "THE SHARES REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933 OF THE UNITED STATES, AS AMENDED. THE SALE, PLEDGE, HYPOTHECATION OR TRANSFER OF THE SECURITIES REPRESENTED BY THIS CERTIFICATE IS SUBJECT TO CERTAIN RESTRICTIONS ON TRANSFER SET FORTH IN A SHAREHOLDERS AGREEMENT, A COPY OF WHICH MAY BE OBTAINED UPON WRITTEN REQUEST TO THE SECRETARY OF THE COMPANY."

6 Purchase for Own Account. The Purchased Shares are acquired for the Purchaser's own account or the account of one or more of such Purchaser's Affiliates, not as a nominee or agent, and not with a view to or in connection with the sale or distribution of any part thereof.

7 Accredited Purchaser. The Purchaser (a) is an "accredited Purchaser" as such term is defined in Rule 501 under the Act, or (b) is not a "U.S. person" and is located outside of the "United States", as such terms are defined in Rule 902 of Regulation S under the Act.

8 Internal Policies. Overland has adopted and implemented each of the following internal policies: (i) a code of conduct governing appropriate workplace behavior, (ii) anti-corruption and anti-money-laundering policies prohibiting actions by directors, management, officers, contractors and strategic suppliers or partners from violation of applicable anti-corruption, anti-bribery or anti-money-laundering laws, (iii) conducting regular checks against sanction, corruption and money laundering lists for employees, contractors and strategic suppliers/partners, as appropriate, and (iv) policies prohibiting use of child labor and supporting human rights (the term "human rights" provided herein refers to those rights recognized in the United Nations' Universal Declaration of Human Rights). Overland provides regular trainings to its directors, management, employees in terms of each of the above policies no less than once a year.

9 Compliance. The Purchaser has satisfied itself as to the full observance of the Laws of its jurisdiction in connection with any invitation to subscribe for the Purchased Shares, any transactions contemplated hereunder or any use of this Agreement, including (i) the legal requirements within its jurisdiction for the purchase of the Purchased Shares, (ii) any foreign exchange restrictions applicable to such purchase, (iii) any governmental or other Consents that may need to be obtained, and (iv) the income tax and other tax consequences, if any, that may be relevant to the purchase, holding, redemption, sale, or transfer of the Purchased Shares.

EXHIBIT E
FORMS

Part I - Form of License Agreement

Part II - Form of Amended and Restated Memorandum and Articles

Part III - Form of Shareholders Agreement

Part IV - Form of Indemnification Agreement

[***] Certain information in this document has been omitted from this exhibit because it is both (i) not material and (ii) would be competitively harmful if publicly disclosed.

SHAREHOLDERS' AGREEMENT

THIS SHAREHOLDERS' AGREEMENT (this "**Agreement**") is entered into on December 14, 2020 by and among:

1. Allogene Overland Biopharm (CY) Limited, an exempted company incorporated under the laws of the Cayman Islands (the "**Company**"),

2. Allogene Therapeutics, Inc., a Delaware corporation ("**Allogene**"), and

3. Overland Pharmaceuticals (CY) Inc., an exempted company incorporated under the laws of the Cayman Islands ("**Overland**").

Each of the parties to this Agreement is referred to herein individually as a "**Party**" and collectively as the "**Parties**". Each of Allogene and Overland is referred to herein as an "**Shareholder**" and collectively as the "**Shareholders**". Capitalized terms used herein without definition have the meanings ascribed to them in the Share Purchase Agreement (as defined below).

RECITALS

A. Each Shareholder has agreed to purchase from the Company certain Seed Preferred Shares pursuant to that certain Share Purchase Agreement dated December 14, 2020 by and among the Company and the Shareholders (the "**Share Purchase Agreement**").

B. Allogene has agreed to enter into that certain Exclusive License Agreement dated December 14, 2020 by and among the Company and Allogene ("**License Agreement**").

C. In connection with the purchase and sale of the Seed Preferred Shares pursuant to the Share Purchase Agreement, and the execution and delivery of the License Agreement, the Company, Allogene and Overland have agreed to enter into this Agreement.

WITNESSETH

NOW, THEREFORE, in consideration of the foregoing recitals, the mutual promises hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties intending to be legally bound hereto hereby agree as follows:

1. Definitions and Interpretation.

1.1 Certain Definitions. Capitalized terms used and not otherwise defined herein have the meaning ascribed to them below:

"**Accounting Standards**" means the generally accepted accounting principles in the United States or other intentional accounting principles approved by the Board, in each case, applied on a consistent basis.

"**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, Controls, is Controlled by, or is under common Control with such Person, including, without limitation, any general partner, limited partner, member, managing member, officer, employee or director of such Person or any venture capital fund now or hereafter existing that is Controlled by one or more general partners or managing members of, or shares the same management company with, such Person. For purposes of this Agreement, none of Allogene or Overland shall be deemed to be an Affiliate of the Company, and the Company shall not be deemed an Affiliate of any of Allogene or Overland.

"**Board**" means the board of directors of the Company.

"**Business Day**" means any day that is not a Saturday, Sunday, legal holiday or other day on which commercial banks are required or authorized by Law to be closed in the People's Republic of China (mainland), Hong Kong, the Cayman Islands or the United States.

"**CAR-T**" has the meaning ascribed thereto in the License Agreement

"**Charter Documents**" means, with respect to a particular legal entity, the articles or certificate of incorporation, formation or registration (including, if applicable, certificates of change of name), memorandum of association, articles of association, bylaws, articles of organization, limited liability company agreement, trust deed, trust instrument, operating agreement, joint venture agreement, business license, or similar or other constitutive, governing, or charter documents, or equivalent documents, of such entity.

"**Commercialization**" has the meaning ascribed thereto in the License Agreement.

"**Commission**" means (i) with respect to any offering of securities in the United States, the Securities and Exchange Commission of the United States or any other federal agency at the time administering the Securities Act, and (ii) with respect to any offering of securities in a jurisdiction other than the United States, the regulatory body of the jurisdiction with authority to supervise and regulate the offering or sale of securities in that jurisdiction.

"**Competing Business**" means research, Development, Commercialization, Manufacturing or sale of allogeneic CAR-T cell products or otherwise engage in the exploitation of allogeneic CAR-T technology.

"**Control**" of a given Person means the power or authority, whether exercised or not, to direct the business, management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; provided, that such power or authority shall conclusively be presumed to exist upon possession of beneficial ownership or power to direct the vote of more than fifty percent (50%) of the votes entitled to be cast at a meeting of the members or shareholders of such Person or power to control the composition of a majority of the board of directors of such Person. The terms "**Controlled**" and "**Controlling**" have meanings correlative to the foregoing.

"**Covered Breach**" means a breach of [***].

"**Deemed Liquidation Event**" has the meaning ascribed thereto in the Memorandum and Articles.

"**Development**" has the meaning ascribed thereto in the License Agreement.

"**Equity Securities**" means, with respect to any Person that is a legal entity, any and all shares of capital stock, membership interests, units, profits interests, ownership interests, equity interests, registered capital, and other equity securities of such Person, and any right, warrant, option, call, commitment, conversion privilege, preemptive right or other right to acquire any of the foregoing, or security convertible into, exchangeable or exercisable for any of the foregoing, or any contract providing for the acquisition of any of the foregoing.

"**Exchange Act**" means the United States Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder, or any comparable law of any other jurisdiction in which the Company's Shares are subject to regulation.

"**Exempted Distribution**" means (a) the purchase, repurchase or redemption of Ordinary Shares by the Company at the lower of the then current fair market value or the original issuance price from terminated employees, officers or consultants upon such termination in accordance with the ESOP, or pursuant to the exercise of a contractual right of first refusal held by the Company, if any, or pursuant to written contractual arrangements with the Company approved by the Board, and (b) the redemption of the Preferred Shares in connection with the conversion of such Preferred Shares into Ordinary Shares pursuant to the Memorandum and Articles.

"**Funding Default**" has the meaning ascribed thereto in the Share Purchase Agreement.

"**Governmental Authority**" has the meaning ascribed thereto in the License Agreement.

"**Governmental Order**" means any applicable order, ruling, decision, verdict, decree, writ, subpoena, mandate, precept, command, directive, consent, approval, award, judgment, injunction or other similar determination or finding by, before or under the supervision of any Governmental Authority.

"**Group Company**" means each of the Company and the Subsidiaries of the Company, including Allogene Overland Biopharm (HK) Limited, a Hong Kong corporation; Allogene Overland Biopharm (PRC) Co., Ltd., a limited company organized under the laws of the People's Republic of China; and any other Subsidiary of the Company existing on or established after the date hereof, and "**Group**" refers to all of Group Companies collectively.

"**Holder**" means holder(s) of Registrable Securities who are parties to this Agreement from time to time, and their permitted transferees that become parties to this Agreement from time to time.

"**Hong Kong**" means the Hong Kong Special Administrative Region of the People's Republic of China.

"**Indebtedness**" means, with respect to any Person, without duplication, each of the following of such Person: (i) all indebtedness for borrowed money, (ii) all obligations issued, undertaken or assumed as the deferred purchase price of property or services (other than trade payables entered into in the ordinary course of business), (iii) all reimbursement or payment obligations with respect to letters of credit, surety bonds and other similar instruments, (iv) all obligations evidenced by notes, bonds, debentures or similar instruments, including obligations so evidenced that are incurred in connection with the acquisition of properties, assets or businesses, (v) all indebtedness created or arising under any conditional sale or other title retention agreement, or incurred as financing, in either case with respect to any property or assets acquired with the proceeds of such indebtedness (even though the rights and remedies of the seller or bank under such agreement in the event of default are limited to repossession or sale of such property), (vi) all obligations that are capitalized (including capitalized lease obligations), (vii) all obligations under banker's acceptance, letter of credit or similar facilities, (viii) all obligations to purchase, redeem, retire, defease or otherwise acquire for value any Equity Securities of such Person, (ix) all obligations in respect of any interest rate swap, hedge or cap agreement, and (x) all guarantees issued in respect of the Indebtedness referred to in clauses (i) through (ix) above of any other Person, but only to the extent of the Indebtedness guaranteed.

"**Intellectual Property**" means any and all (i) patents, patent rights and applications therefor and reissues, reexaminations, continuations, continuations-in-part, divisions, and patent term extensions thereof, (ii) inventions (whether patentable or not), discoveries, improvements, technical information, know-how, trade secrets, drawings, formulations, protocols, specifications, data, customer lists, databases, proprietary processes, technology, formulae and other know-how, (iii) registered and unregistered copyrights, copyright registrations and applications, mask works and registrations and applications therefor, author's rights and works of authorship, (iv) URLs, web sites, web pages and any part thereof, (v) trade names, trade dress, trademarks, domain names, service marks, logos, business names, and registrations and applications therefor, and the goodwill symbolized or represented by the foregoing.

"**IPO**" means an underwritten initial public offering of the Ordinary Shares (or American Depositary Shares or other securities representing its Ordinary Shares) on a U.S. national securities exchange or other internationally recognized securities exchange.

"**Law**" or "**Laws**" means any and all provisions of any applicable constitution, treaty, statute, law, regulation, ordinance, code, rule, or rule of common law, any governmental approval, concession, grant, franchise, license, agreement, directive, requirement, or other governmental restriction or any similar form of decision of, or determination by, or any formally issued written interpretation or administration of any of the foregoing by, any Governmental Authority, in each case as amended, and any and all applicable Governmental Orders.

"**Manufacturing**" has the meaning ascribed thereto in the License Agreement.

"**Memorandum and Articles**" means the Memorandum and Articles of Association of the Company, as may be amended and/or restated from time to time.

"**Ordinary Shares**" has the same meaning as ascribed thereto in the Memorandum and Articles.

"**Overland Party**" means any Person who, directly or indirectly, is Controlled by Overland.

"**Overland Parent Party**" means any Person who Controls or is under common Control with Overland that is not an Overland Party.

"**Person**" means any individual, sole proprietorship, partnership, limited partnership, limited liability company, firm, joint venture, estate, trust, unincorporated organization, association, corporation, institution, public benefit corporation, entity or governmental or regulatory authority or other enterprise or entity of any kind or nature.

"**Products**" has the meaning ascribed thereto in the License Agreement.

"**Preferred Directors**" has the same meaning as ascribed thereto in the Memorandum and Articles.

"**Preferred Shares**" means the Seed Preferred Shares.

"**Qualified IPO**" or "**QIPO**" means an IPO with: (a) gross proceeds to the Company (before payment of underwriters' discounts, commissions and offering expenses) of not less than US$[***], and (b) a total pre-offering market capitalization of the Company of not less than US$[***], unless otherwise approved by the Board of the Directors.

"**Registrable Securities**" means (i) the Ordinary Shares issued or issuable upon conversion of the Preferred Shares, excluding any Ordinary Shares issued upon conversion of the Preferred Shares pursuant to the Special Mandatory Conversion and (ii) any Ordinary Shares of the Company issued or issuable as a dividend or other distribution with respect to, in exchange for, or in replacement of, the shares referenced in (i) herein; excluding in all cases, however, any of the foregoing sold by a Person in a transaction other than an assignment pursuant to Section 10.4. For purposes of this Agreement, Registrable Securities shall cease to be Registrable Securities when such Registrable Securities have been disposed of pursuant to an effective registration statement or sold pursuant to SEC Rule 144.

"**Related Parties**" means any of the following: (i) any Shareholder or any shareholder of any other Group Company, which beneficially owns no less than five percent (5%) of the voting securities or ownership interests in the Company or such other Group Company, as the case may be (each, a "**Substantial Shareholder**"), other than any Group Company; (ii) any director or executive officer of any Group Company; (iii) any Person in which any Substantial Shareholder, or director or executive officer of any Group Company, beneficially owns no less than five percent (5%) of the voting securities or ownership interest; and (iv) an relative or spouse of any of the foregoing Persons.

"**Securities Act**" means the United States Securities Act of 1933, as amended and interpreted from time to time, and the rules and regulations promulgated thereunder, or comparable law in a jurisdiction other than the United States.

"**Seed Preferred Shares**" has the same meaning as ascribed thereto in the Memorandum and Articles.

"**Shares**" means the Ordinary Shares and the Preferred Shares collectively.

"**SEC Rule 144**" means Rule 144 promulgated by the Commission under the Securities Act (or comparable law in a jurisdiction other than the United States).

"**Special Mandatory Conversion**" has the meaning ascribed thereto in the Memorandum and Articles.

"**Subsidiary**" means, with respect to any given Person, any other Person that is Controlled directly or indirectly by such given Person.

"**Transaction Documents**" has the meaning ascribed thereto in the Share Purchase Agreement.

"**Third Party**" shall mean any entity other than the Parties and their Affiliates.

"**U.S.**" means the United States of America.

1.2 Other Definitions. In addition, the following terms have the meanings defined for such terms in the Sections set forth below:

"**Agreement**"	Preamble
"**Allogene**"	Preamble
"**Allogene Designees**"	Section 3.1
"**Available New Securities**"	Section 7.4
"**CEO**"	Section 4.2(xii)
"**CEO Director**"	Section 3.1
"**CFO**"	Section 4.2(xii)
"**CTO**"	Section 4.2(xii)
"**Company**"	Preamble
"**Confidential Information**"	Section 9.3(i)
"**Deadlock**"	Section 3.4
[***]	Section 10.2
"**Dispute**"	Section 10.6(i)
"**ESOP**"	Section 7.3(i)
"**Effective Date**"	Section 10.19
"**Fully Exercising Shareholder**"	Section 7.4
"**F-3 Initiating Holders**"	Section 5.4
"**Holding Company**"	Section 8.3
"**ICC**"	Section 10.6(ii)(a)
"**Initiating Holders**"	Section 5.2(i)
"**Investor Directors**"	Section 3.1(iv)
"**License Agreement**"	Recitals
"**Shareholder**"	Preamble
"**Shareholder Indemnitors**"	Section 9.6
"**New Securities**"	Section 7.3
"**Notice Period**"	Section 7.4
"**Overland**"	Preamble
"**Overland Designees**"	Section 3.1
[***]	Section 9.10(i)
"**Participation Notice**"	Section 7.4
"**Party(ies)**"	Preamble
"**Preemptive Right**"	Section 7.1
"**Pro Rata Share**"	Section 7.2
"**Prohibited Payment**"	Section 9.4
"**Public Official**"	Section 9.4
"**Remaining New Securities**"	Section 7.4
"**Rights Holder**"	Section 7.1
"**Share Purchase Agreement**"	Recitals
"**Transfer**"	Section 8.1
"**Transferor**"	Section 8.1
"**Violation**"	Section 5.9(i)

1. Interpretation. For all purposes of this Agreement, except as otherwise expressly herein provided, (i) the terms defined in this Section 1 shall have the meanings

assigned to them in this Section 1 and include the plural as well as the singular, (ii) all accounting terms not otherwise defined herein have the meanings assigned under the Accounting Standards, (iii) all references in this Agreement to designated Sections and other subdivisions are to the designated Sections and other subdivisions of the body of this Agreement, (iv) pronouns of either gender or neuter shall include, as appropriate, the other pronoun forms, (v) the words "herein," "hereof" and "hereunder" and other words of similar import refer to this Agreement as a whole and not to any particular Section or other subdivision, (vi) all references in this Agreement to designated Schedules, Exhibits and Appendices are to the Schedules, Exhibits and Appendices attached to this Agreement, (vii) references to this Agreement, any other Transaction Documents and any other document shall be construed as references to such document as the same may be amended, supplemented or novated from time to time, (viii) the phrase "directly or indirectly" means directly, or indirectly through one or more intermediate Persons or through contractual or other arrangements, and "direct or indirect" has the correlative meaning, (ix) the term "voting power" refers to the number of votes attributable to the Shares (on an as-converted basis) in accordance with the terms of the Memorandum and Articles, (x) the headings used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement, (xi) references to laws include any such law modifying, reenacting, extending or made pursuant to the same or which is modified, reenacted, or extended by the same or pursuant to which the same is made, and (xii) all references to dollars or to "US$" are to currency of the United States of America (and shall be deemed to include reference to the equivalent amount in other currencies).

2. Initial Operations and Management.

(i) **Initial Operations**. Overland and Allogene shall use good faith efforts in collaborating with each other in helping the Company with its initial operations and adopting and implementing its business plans.

(ii) **Management**. Allogene shall have the right to nominate the Company's CTO, Overland shall have the right to nominate the Company's CFO for so long as Overland is not a Defaulting Shareholder, and the Shareholders shall jointly have the right to nominate the Company's CEO for so long as Overland is not a Defaulting Shareholder. The appointment of each of the CTO, CFO and CEO shall be subject to approval by the Board. The Company will recruit the rest of the initial management team, in consultation with Overland and Allogene.

3. Election of Directors.

3.1 Board of Directors. Each Shareholder agrees to vote, or cause to be voted, all Shares owned by such Shareholder, or over which such Shareholder has voting control, from time to time and at all times, in whatever manner as shall be necessary to ensure that (a) the size of the Board shall remain at least five (5) directors; and (b) at each annual or special meeting of shareholders at which an election of directors is held or pursuant to any written consent of the shareholders, the following persons shall be elected to the Board:

(i) one (1) Preferred Director designated from time to time by Overland, for so long as (a) Overland is not a Defaulting Shareholder and (b) Overland or its Affiliates hold at least 20% of Ordinary Shares issued or issuable upon the conversion of the Preferred

Shares issued to Overland at the Closing (as adjusted in connection with share splits or share consolidation, reclassification or other similar event), which person shall initially be Ed Zhang and shall serve as a co-chair of the Board;

(ii) a second Preferred Director designated from time to time by Overland, for so long as (a) Overland is not a Defaulting Shareholder and (b) Overland or its Affiliates hold at least 40% of Ordinary Shares issued or issuable upon the conversion of the Preferred Shares issued to Overland at the Closing (as adjusted in connection with share splits or share consolidation, reclassification or other similar event), which person shall initially be Hua Mu (together with the Preferred Director referenced in Section 3.1(i), the "**Overland Designees**");

(iii) one (1) Preferred Director designated from time to time by Allogene, for so long as Allogene or its Affiliates hold at least 20% of Ordinary Shares issued or issuable upon the conversion of the Preferred Shares issued to Allogene at the Closing (as adjusted in connection with share splits or share consolidation, reclassification or other similar event), which person shall initially be Eric Schmidt and shall serve as a co-chair of the Board;

(iv) a second Preferred Director designated from time to time by Allogene, for so long as Allogene or its Affiliates hold at least 40% of Ordinary Shares issued or issuable upon the conversion of the Preferred Shares issued to Allogene at the Closing (as adjusted in connection with share splits or share consolidation, reclassification or other similar event), which person shall initially be Alison Moore (together with the Preferred Director referenced in Section 3.1(iii), the "**Allogene Designees**" and such parties, together with the Overland Designees, the "**Investor Directors**"); and

(v) the Company's Chief Executive Officer (the "**CEO Director**"), provided that if for any reason the CEO Director shall cease to serve as the Chief Executive Officer of the Company, each of the Shareholders shall promptly vote its respective Shares (i) to remove the former Chief Executive Officer of the Company from the Board if such person has not resigned as a member of the Board; and (ii) to elect such person's replacement as Chief Executive Officer of the Company as the new CEO Director.

3.2 Voting Agreements

(i) With respect to each election of directors of the Board, each holder of voting securities of the Company shall vote at each meeting of shareholders of the Company, or in lieu of any such meeting shall give such holder's written consent with respect to, as the case may be, all of such holder's voting securities of the Company as may be necessary (i) to ensure that the authorized size of the Board shall be at least five (5) directors, (ii) to cause the election or re-election as members of the Board, and during such period to continue in office, each of the individuals designated pursuant to Section 3.1, and (iii) against any nominees not designated pursuant to Section 3.1.

(ii) Any director designated pursuant to Section 3.1 may be removed from the Board, either for or without cause, upon written request of the Person or class of Persons then entitled to designate such director pursuant to Section 3.1, and the Parties agree not to seek, vote for or otherwise effect the removal of any such director without such written

request. Any Person or group of Persons then entitled to designate any individual to be elected as a director on the Board shall have the exclusive right at any time or from time to time to fill any vacancy caused by the death, disability, retirement, resignation or removal of any director occupying such position or any other vacancy therein. Each holder of voting securities of the Company agrees to always vote such holder's respective voting securities of the Company at a meeting of the members of the Company (and given written consents in lieu thereof) in support of the foregoing.

3.3 Quorum. The Board shall hold no less than one (1) board meeting during each fiscal quarter. If within half an hour from the time appointed for the meeting a quorum is not present, the meeting shall stand adjourned to the same day in the next week at the same time and place or to such other time or such other place as all directors of the Company may agree; provided further that a quorum shall be deemed present at the third time if the meeting has been so adjourned three times. A quorum shall be constituted (whether in person or by means of a conference telephone or any other equipment which allows all participants in the meeting to speak to and hear each other simultaneously) with (a) the presence of at least one (1) Overland Designee for so long as Overland is entitled to appoint a designate to the Board and (b) the presence of at least one (1) Allogene Designee for so long as Allogene SPV is entitled to appoint a designee to the Board.

3.4 Board Voting; Deadlocks. Subject to Section 4, questions arising at any meeting of the Board shall be decided by a majority of votes present at such meeting (and at any Board meeting each Director may exercise one vote), provided, that in case of an equality of votes (a "**Deadlock**"), the chair or co-chair of the Board (if any) shall not have a second or casting vote.

3.5 Committees. Each of the Preferred Directors is entitled to sit on each committee of the Board.

3.6 Expenses. The Company will promptly pay or reimburse each non-employee Board member for all reasonable out-of-pocket expenses incurred in connection with attending Board or committee meetings and otherwise performing their duties as directors and committee members.

3.7 Subsidiary Board. To the extent permitted by applicable laws, each Group Company (other than the Company) shall, and the parties hereto shall cause each such Group Companies to have a board of directors or similar governing body to, at all times, have the same authorized size and composition of directors as the Company's Board.

4. Protective Provisions.

4.1 Protective Provisions at Shareholder Level. Notwithstanding anything to the contrary provided herein, and in addition to and without prejudice to any other vote, consent or approval that may be required in the Memorandum and Articles or other Transaction Documents and applicable Laws, (a) so long as Allogene or its Affiliates hold [***] of the Ordinary Shares issued or issuable upon the conversion of the Preferred Shares issued to Allogene at the Closing and (b) so long as Overland or its Affiliates hold [***] of the Ordinary Shares issued or issuable upon the conversion of the Preferred Shares issued to Overland at the Closing (in each case, as adjusted in connection with share splits or share

consolidation, reclassification or other similar event), no Group Company shall, directly or indirectly, by amendment, merger, consolidation or otherwise, take any of the following actions unless approved in writing by Allogene and Overland (as applicable): [***]

4.2 Protective Provisions at Director Level. Notwithstanding anything to the contrary provided herein, and in addition to and without prejudice to any other vote, consent or approval that may be required in the Memorandum and Articles or other Transaction Documents and applicable Laws, no Group Company shall, directly or indirectly, by amendment, merger, consolidation or otherwise, take any of the following actions unless approved by the Board, including (a) a majority of the Allogene Designees so long as there are any Allogene Designees on the Board and (b) a majority of the Overland Designees so long as there are any Overland Designees on the Board: [***]

5. Registration Rights.

5.1 Applicability of Rights; Non-U.S. Registrations. The Holders shall be entitled to the following rights set forth in the provisions of this Section 5 with respect to any potential public offering of the Company's Ordinary Shares in the United States and shall be entitled to reasonably analogous or equivalent rights with respect to any other offering of the Company's securities in any other jurisdiction pursuant to which the Company undertakes to publicly offer or list such securities for trading on a recognized securities exchange. For the purposes of this Section 5, reference to registration of securities under the Securities Act and the Exchange Act shall be deemed to mean the equivalent registration in a jurisdiction other than the United States as designated by such Holders, it being understood and agreed that in each such case all references in this Agreement to the Securities Act, the Exchange Act and rules, forms of registration statements and registration of securities thereunder, U.S. law and the SEC, shall be deemed to refer, to the equivalent statutes, rules, forms of registration statements, registration of securities and laws of and equivalent government authority in the applicable non-U.S. jurisdiction.

5.2 Request for Registration.

(i) Subject to the conditions of this Section 5.2, if the Company shall receive at any time after six (6) months following the effective date of the registration statement for the IPO, a written request from the Holders of twenty-five percent (25%) or more of the Registrable Securities then outstanding (for purposes of this Section 5.2, the "**Initiating Holders**") that the Company file a registration statement under the Securities Act covering the registration of at least ten percent (10%) of the Registrable Securities then outstanding, then the Company shall, within twenty (20) days of the receipt thereof, give written notice of such request to all Holders, and subject to the limitations of this Section 5.2, use commercially reasonable efforts to effect, as soon as practicable, the registration under the Securities Act of all Registrable Securities that the Holders request to be registered in a written request received by the Company within twenty (20) days of the mailing of the Company's notice pursuant to this Section 5.2(i).

(ii) If the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 5.2, and the Company shall include such information in the written notice referred to in Section 5.2(i). In such event the right of any

Holder to include its Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting (unless otherwise mutually agreed by a majority in interest of the Initiating Holders and such Holder) to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall enter into an underwriting agreement in customary form with the underwriter or underwriters selected for such underwriting by the Company. Notwithstanding any other provision of this Section 5.2, if the underwriter advises the Company that marketing factors require a limitation on the number of securities underwritten (including Registrable Securities), then the Company shall so advise all Holders of Registrable Securities that would otherwise be underwritten pursuant hereto, and the number of Shares that may be included in the underwriting shall be allocated to the Holders of such Registrable Securities pro rata based on the number of Registrable Securities held by all such Holders (including the Initiating Holders). In no event shall any Registrable Securities be excluded from such underwriting unless all other securities are first excluded. Any Registrable Securities excluded or withdrawn from such underwriting shall be withdrawn from the registration.

(iii) Notwithstanding the foregoing, the Company shall not be required to effect a registration pursuant to this Section 5.2:

(a) after the Company has effected two (2) registrations pursuant to this Section 5.2, and such registrations have been declared or ordered effective;

(b) If the Company has effected a registration pursuant to this Section 5.2 within the preceding twelve (12) months, and such registration has been declared or ordered effective;

(c) during the period starting with the date sixty (60) days prior to the Company's good faith estimate of the date of the filing of, and ending on a date one hundred eighty (180) days following the effective date of, a Company-initiated registration subject to Section 5.3, provided that the Company is actively employing in good faith all commercially reasonable efforts to cause such registration statement to become effective;

(d) if the Initiating Holders propose to dispose of Registrable Securities that may be registered on Form F-3 pursuant to Section 5.4;

(e) if the Company shall furnish to Holders requesting a registration pursuant to this Section 5.2 a certificate signed by the CEO or chair of the Board stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its members for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the Initiating Holders, provided that the Company shall not register any other of its Shares during such ninety (90) days period; or

(f) in any particular jurisdiction in which the Company would be required to execute a general consent to service of process in effecting such

registration, unless the Company is already subject to service in such jurisdiction and except as may be required under the Securities Act or pursuant to applicable securities laws in other jurisdictions, as the case may be.

5.3 Company Registration.

(i) If (but without any obligation to do so) the Company proposes to register (including for this purpose a registration effected by the Company for members other than the Holders) any of its Shares or other securities under the Securities Act in connection with the public offering of such securities (other than (i) a registration relating to a demand pursuant to Section 5.2 or (ii) a registration relating solely to the sale of securities of participants in a Company equity incentive plan, a registration relating to a corporate reorganization or transaction under Rule 145 of the Securities Act, a registration on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities, or a registration in which the only Ordinary Shares being registered are Ordinary Shares issuable upon conversion of debt securities that are also being registered), the Company shall, at such time, promptly give each Holder written notice of such registration. Upon the written request of each Holder given within twenty (20) days after mailing of such notice by the Company, the Company shall, subject to the provisions of Section 5.3(iii), use all commercially reasonable efforts to cause to be registered under the Securities Act all of the Registrable Securities that each such Holder requests to be registered.

(ii) **Right to Terminate Registration**. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 5.3 prior to the effectiveness of such registration whether or not any Holder has elected to include securities in such registration. The expenses of such withdrawn registration shall be borne by the Company in accordance with Section 5.7 hereof.

(iii) **Underwriting Requirements**. If a registration statement under which the Company gives notice under this Section 5.3 is for an underwritten offering, the Company shall not be required under this Section 5.3 to include any of the Holders' securities in such underwriting unless they accept the terms of the underwriting as agreed upon between the Company and the underwriters selected by the Company (or by other persons entitled to select the underwriters) and enter into an underwriting agreement in customary form with such underwriters, and then only in such quantity as the underwriters determine in their sole discretion will not jeopardize the success of the offering by the Company. If the total amount of securities, including Registrable Securities, requested by the members of the Company to be included in such offering exceeds the amount of securities sold other than by the Company that the underwriters determine in their sole discretion is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities, that the underwriters determine in their sole discretion will not jeopardize the success of the offering. In no event shall any Registrable Securities be excluded from such offering unless all other members' securities have been first excluded. In the event that the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the Registrable Securities that are included in such offering shall be apportioned pro rata among the selling Holders based on the number of Registrable Securities held by all selling Holders or in such

other proportions as shall mutually be agreed to by all such selling Holders. Notwithstanding the foregoing, in no event shall the amount of securities of the selling Holders included in the offering be reduced below twenty percent (20%) of the total amount of securities included in such offering, unless such offering is the IPO, in which case the selling Holders may be excluded if the underwriters make the determination described above and no other member's securities are included in such offering. For purposes of the preceding sentence concerning apportionment, for any selling shareholder that is a Holder of Registrable Securities and that is a venture capital fund, partnership or corporation, the affiliated venture capital funds, partners, retired partners and holders of such Holder, or the estates and family members of any such partners and retired partners and any trusts for the benefit of any of the foregoing persons shall be deemed to be a single "selling Holder," and any pro rata reduction with respect to such "selling Holder" shall be based upon the aggregate amount of Registrable Securities owned by all such related entities and individuals.

5.4 Form F-3 Registration. In case the Company shall receive from the Holders of at least fifteen percent (15%) of the Registrable Securities (for purposes of this Section 5.4, the "***F-3 Initiating Holders***") a written request or requests that the Company effect a registration on Form F-3 (or an equivalent registration in a jurisdiction outside of the United States) and any related qualification or compliance with respect to all or a part of the Registrable Securities owned by such Holder or Holders, the Company shall:

(i) promptly give written notice of the proposed registration, and any related qualification or compliance, to all other Holders; and

(ii) use all commercially reasonable efforts to effect, as soon as practicable, such registration and all such qualifications and compliances as may be so requested and as would permit or facilitate the sale and distribution of all or such portion of such Holders' Registrable Securities as are specified in such request, together with all or such portion of the Registrable Securities of any other Holders joining in such request as are specified in a written request given within fifteen (15) days after receipt of such written notice from the Company, provided, however, that the Company shall not be obligated to effect any such registration, qualification or compliance, pursuant to this Section 5.4:

(a) if Form F-3 is not available for such offering by the Holders;

(b) if the Holders, together with the holders of any other securities of the Company entitled to inclusion in such registration, propose to sell Registrable Securities and such other securities (if any) at an aggregate price to the public (net of any underwriters' discounts or commissions) of less than US$ 5,000,000;

(c) if the Company shall furnish to all Holders requesting a registration statement pursuant to this Section 5.4 a certificate signed by the Company's CEO or chairman of the Board stating that in the good faith judgment of the Board, it would be seriously detrimental to the Company and its members for such registration statement to be effected at such time, in which event the Company shall have the right to defer such filing for a period of not more than ninety (90) days after receipt of the request of the F-3 Initiating Holders, provided that such right shall be exercised by the Company not more than

once in any twelve (12) month period and provided further that the Company shall not register any securities for the account of itself or any other shareholder during such ninety (90) day period;

(d) after the Company has effected four (4) registrations pursuant to this Section 5.4, and such registrations have been declared or ordered effective;

(e) if the Company has, within the six (6) month period preceding the date of such request, already effected a registration for the Holders pursuant to this Section 5.4; or

(f) in any particular jurisdiction in which the Company would be required to execute a general consent to service of process in effecting such registration, unless the Company is already subject to service in such jurisdiction and except as may be required under the Securities Act or pursuant to applicable securities laws in other jurisdictions, as the case may be.

(iii) If the F-3 Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to this Section 5.4 and the Company shall include such information in the written notice referred to in Section 5.4(i). The provisions of Section 5.2(ii) shall be applicable to such request (with the substitution of Section 5.4 for references to Section 5.2).

(iv) Subject to the foregoing, the Company shall use its commercially reasonable efforts to file a registration statement covering the Registrable Securities and other securities so requested to be registered as soon as practicable after receipt of the request or requests of the F-3 Initiating Holders. Registrations effected pursuant to this Section 5.4 shall not be counted as requests for registration effected pursuant to Section 5.2.

5.5 Obligations of the Company. Whenever required under this Section 5 to effect the registration of any Registrable Securities, the Company shall, as expeditiously as reasonably possible:

(i) prepare and file with the Commission a registration statement with respect to such Registrable Securities and use its commercially reasonable efforts to cause such registration statement to become effective, and keep such registration statement effective for a period of up to ninety (90) days or, in the case of Registrable Securities registered under Form F-3 in accordance with Rule 415 under the Securities Act or a successor rule, until the distribution contemplated in the registration statement has been completed; provided, however, that (i) such ninety (90) day period shall be extended for a period of time equal to the period any Holder refrains from selling any securities included in such registration at the request of the underwriter(s), and (ii) in the case of any registration of Registrable Securities on Form F-3 which are intended to be offered on a continuous or delayed basis, such ninety (90) day period shall be extended, if necessary, to keep the registration statement effective until all such Registrable Securities are sold;

(ii) prepare and file with the Commission such amendments and supplements to such registration statement and the prospectus used in connection with such

registration statement as may be necessary to comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such registration statement;

(iii) furnish to the Holders such number of copies of a prospectus, including a preliminary prospectus, in conformity with the requirements of the Securities Act, and such other documents as they may reasonably request in order to facilitate the disposition of the Registrable Securities owned by them that are included in such registration;

(iv) use all commercially reasonable efforts to register and qualify the securities covered by such registration statement under such other securities or blue sky laws of such jurisdictions as shall be reasonably requested by the Holders, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(v) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement in usual and customary form, with the managing underwriter(s) of such offering;

(vi) notify each Holder of Registrable Securities covered by such registration statement at any time when a prospectus relating thereto is required to be delivered under the Securities Act of (i) the issuance of any stop order by the Commission in respect of such registration statement, or (ii) the happening of any event as a result of which the prospectus included in such registration statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in the light of the circumstances then existing;

(vii) cause all such Registrable Securities registered pursuant to this Section 5 to be listed on each securities exchange on which similar securities issued by the Company are then listed, if any;

(viii) provide a transfer agent and registrar for all Registrable Securities registered pursuant hereunder and a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration.

Notwithstanding the provisions of this Section 5, the Company shall be entitled to postpone or suspend, for a reasonable period of time, the filing, effectiveness or use of, or trading under, any registration statement if the Company shall determine that any such filing or the sale of any securities pursuant to such registration statement would in the good faith judgment of the Board: (i) materially impede, delay or interfere with any material pending or proposed financing, acquisition, corporate reorganization or other similar transaction involving the Company for which the Board has authorized negotiations; (ii) materially adversely impair the consummation of any pending or proposed material offering or sale of any class of securities by the Company; or (iii) require disclosure of material nonpublic information that, if disclosed at such time, would be materially harmful to the interests of the Company and its shareholders; provided, however, that during any such period all executive officers and directors of the Company are also prohibited from selling

securities of the Company (or any security of any of the Company's subsidiaries or affiliates). In the event of the suspension of effectiveness of any registration statement pursuant to this Section 5.5, the applicable time period during which such registration statement is to remain effective shall be extended by that number of days equal to the number of days the effectiveness of such registration statement was suspended.

5.6 Information from Holder. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 5 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as shall be reasonably required to effect the registration of such Holder's Registrable Securities.

5.7 Expenses of Registration. All expenses other than underwriting discounts and commissions incurred in connection with registrations, filings or qualifications pursuant to Sections 5.2, 5.3 and 5.4, including, without limitation, all registration, filing and qualification fees, printers' and accounting fees, fees and disbursements of counsel for the Company and the reasonable fees and disbursements of one counsel for the selling Holders shall be borne by the Company. Notwithstanding the foregoing, the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 5.2 or Section 5.4 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities to be registered (in which case all participating Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless, in the case of a registration requested under Section 5.2, the Holders of a majority of the Registrable Securities agree to forfeit their right to one (1) demand registration pursuant to Section 5.2 and provided, however, that if at the time of such withdrawal, the Holders have learned of a material adverse change in the condition, business or prospects of the Company from that known to the Holders at the time of their request and have withdrawn the request with reasonable promptness following disclosure by the Company of such material adverse change, then the Holders shall not be required to pay any of such expenses and shall retain their rights pursuant to Sections 5.2 and 5.4.

5.8 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any such registration as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 3.

5.9 Indemnification. In the event any Registrable Securities are included in a registration statement under this Section 5:

(i) To the extent permitted by applicable law, the Company will indemnify and hold harmless each Holder and its Affiliates, its and their partners, officers, directors, legal counsel and accountants, and any underwriter (as defined in the Securities Act) for such person and each person, if any, who controls such person or underwriter within the meaning of the Securities Act or the Exchange Act, against any losses, claims, damages, or liabilities (joint or several) to which they may become subject under the Securities Act, the Exchange Act or other United States federal or state law, insofar as such losses, claims,

damages, or liabilities (or actions in respect thereof) arise out of or are based upon any of the following statements, omissions or violations (collectively a "***Violation***"): (i) any untrue statement or alleged untrue statement of a material fact contained in such registration statement, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) the omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any United States federal or state securities law or any rule or regulation promulgated under the Securities Act, the Exchange Act or any United States federal or state securities law in connection with the offering covered by such registration statement; and the Company will reimburse each such Holder, underwriter, controlling person or other aforementioned person for any legal or other expenses reasonably incurred by them in connection with investigating or defending any such loss, claim, damage, liability or action as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 5.9(i) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Company (which consent shall not be unreasonably withheld), nor shall the Company be liable in any such case for any such loss, claim, damage, liability or action to the extent that it arises out of or is based upon a Violation that occurs in reliance upon and in conformity with written information furnished expressly for use in connection with such registration by any such Holder, underwriter, controlling person or other aforementioned person.

(ii) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, each of its directors, each of its officers who has signed the registration statement, each person, if any, who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company, any underwriter, any other Holder selling securities in such registration statement and any controlling person of any such underwriter or other Holder, against any losses, claims, damages or liabilities (joint or several) to which any of the foregoing persons may become subject, under the Securities Act, the Exchange Act or other United States federal or state law, insofar as such losses, claims, damages or liabilities (or actions in respect thereto) arise out of or are based upon any Violation, in each case to the extent (and only to the extent) that such Violation occurs in reliance upon and in conformity with written information furnished by such Holder expressly for use in connection with such registration; and each such Holder will reimburse any person intended to be indemnified pursuant to this Section 5.9(ii) for any legal or other expenses reasonably incurred by such person in connection with investigating or defending any such loss, claim, damage, liability or action as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 5.9(ii) shall not apply to amounts paid in settlement of any such loss, claim, damage, liability or action if such settlement is effected without the consent of the Holder (which consent shall not be unreasonably withheld), and provided that in no event shall any indemnity under this Section 5.9(ii) exceed the net proceeds from the offering received by such Holder.

(iii) Promptly after receipt by an indemnified party under this Section 5.9 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 5.9, deliver to the

indemnifying party a written notice of the commencement thereof and the indemnifying party shall have the right to participate in and, to the extent the indemnifying party so desires, jointly with any other indemnifying party similarly noticed, to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one (1) separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such proceeding. The failure to deliver written notice to the indemnifying party within a reasonable time of the commencement of any such action, if prejudicial to its ability to defend such action, shall relieve such indemnifying party of liability to the indemnified party under this Section 5.9 to the extent of such prejudice, but the omission to so deliver written notice to the indemnifying party will not relieve it of any liability that it may have to any indemnified party otherwise than under this Section 5.9.

(iv) If the indemnification provided for in this Section 5.9 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, liability, claim, damage or expense referred to herein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, liability, claim, damage or expense in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and the indemnified party on the other hand in connection with the statements or omissions that resulted in such loss, liability, claim, damage or expense, as well as any other relevant equitable considerations; provided, however, that (i) no contribution by any Holder, when combined with any amounts paid by such Holder pursuant to Section 5.9(ii), shall exceed the net proceeds from the offering received by such Holder and (ii) no person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 5.9(iv), when combined with the amounts paid or payable by such Holder pursuant to Section 5.9(ii), exceed the proceeds from the offering received by such Holder (net of any expenses paid by such Holder). The relative fault of the indemnifying party and the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

(v) The obligations of the Company and Holders under this Section 5.9 shall survive the completion of any offering of Registrable Securities in a registration statement under this Section 5 and otherwise.

5.10 Rule 144 Reporting. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rules and regulations of the Commission which may at any time permit a Holder to sell the Registrable Securities to the public without registration or pursuant to a registration on Form F-3, the Company agrees to

(i) make and keep public information available, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the IPO;

(ii) file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after it has become subject to such reporting requirements); and

(iii) so long as a Holder owns any Registrable Securities, furnish to such Holder forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the first registration statement filed by the Company), the Securities Act and the Exchange Act (at any time after it has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form F-3 (at any time after it so qualifies), (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company, and (iii) such other information as may be reasonably requested to avail any Holder of any rule or regulation of the Commission that permits the selling of any such securities without registration or pursuant to such form.

5.11 Assignment of Registration Rights. The rights to cause the Company to register Registrable Securities pursuant to this Section 5 may be assigned (but only with all related obligations) by a Holder to a transferee or assignee of such securities that (a) is an Affiliate, subsidiary, parent, partner, limited partner, retired partner or shareholder of a Holder or (b) is a Holder's immediate family member (spouse or child) or trust for the benefit of an individual Holder; provided: (i) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee or assignee and the securities with respect to which such registration rights are being assigned; (ii) such transferee or assignee agrees in writing to be bound by and subject to the terms and conditions of this Agreement, including, without limitation, the provisions of Section 5.13 below; and (iii) such assignment shall be effective only if immediately following such transfer the further disposition of such securities by the transferee or assignee is restricted under the Securities Act.

5.12 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders holding at least two-thirds of the Registrable Securities then held by all Holders, enter into any agreement with any holder or prospective holder of any securities of the Company that would allow such holder or prospective holder (a) to include any of such securities in any registration filed under Section 5.2, Section 5.3 or Section 5.4 hereof, unless under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the amount of the Registrable Securities of the Holders that are included or (b) to demand registration of their securities.

5.13 "Market Stand-Off" Agreement. Each Holder agrees, if so required by the managing underwriter(s), that it will not during the period commencing on the date of the final prospectus relating to the Company's IPO and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180)

days from the date of such final prospectus), (i) lend, charge, mortgage, offer, pledge, hypothecate, hedge, sell, make any short sale of, loan, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any Equity Securities of the Company owned immediately prior to the date of the final prospectus relating to the IPO (other than those included in such offering), or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such Equity Securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Equity Securities of the Company or such other securities, in cash or otherwise; provided, that (a) the foregoing provisions of this Section shall not apply to the sale of any securities of the Company to an underwriter pursuant to any underwriting agreement, and shall not be applicable to any Holder unless all directors, officers and all other holders of at least one percent (1%) of the outstanding share capital of the Company (calculated on an as-converted to Ordinary Share basis) must be bound by restrictions at least as restrictive as those applicable to any such Holder pursuant to this Section, (b) this Section shall not apply to an Holder to the extent that any other Person subject to substantially similar restrictions is released in whole or in part, and (c) the lockup agreements shall permit an Holder to transfer its Equity Securities to its Affiliates so long as the transferees enter into the same lockup agreement. Each Holder agrees to execute and deliver to the underwriters a lock-up agreement containing substantially similar terms and conditions as those contained herein. In order to enforce the foregoing covenant, the Company may place restrictive legends on the certificates and impose stop-transfer instructions with respect to such Equity Securities of each Holder (and the shares or securities of every other Person subject to the foregoing restriction) until the end of such period. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Company stockholders that are subject to such agreements, based on the number of shares subject to such agreements.

5.14 Hong Kong Offering. If the Company shall be actively pursuing a listing on the Hong Kong Stock Exchange, the Company can restrict or otherwise prohibit the sale or transfer of any of its equity securities if, in the good faith determination of the Board, (a) such sale or transfer or the related payment or settlement therefor is proposed to or will occur during the 28-day period ending on the date immediately prior to the date of the Company's planned first submission of its first listing application form with the Hong Kong Stock Exchange (or such other relevant period as promulgated by the Hong Kong Stock Exchange or applicable Hong Kong securities regulators) or (b) such sale or transfer, after consulting the Company's legal counsel and sponsor(s) for the listing, may result in the delay of the Company's planned timetable for the planned listing.

(i) In the event of any share dividend, share split, recapitalization or other change affecting the Company's outstanding Ordinary Shares effected without receipt of consideration, then any new, substituted or additional securities distributed with respect to the Shares shall be immediately subject to the provisions of this Section 5.14, to the same extent the Shares are at such time covered by such provisions.

(ii) In order to enforce the limitations of this Section 5.14, the Company may impose stop-transfer instructions with respect to the Shares until the end of the applicable stand-off period.

5.15 Termination of Registration Rights. No Holder shall be entitled to exercise any right provided for in this Section 5 (a) after five (5) years following the consummation of the QIPO; (b) as to any Holder, such earlier time at which all Registrable Securities held by such Holder (and any Affiliate of the Holder with whom such Holder must aggregate its sales under SEC Rule 144) can be sold in any three (3)-month period without registration in compliance with SEC Rule 144; or (c) upon a liquidation, winding up or dissolution of the Company or a Deemed Liquidation Event.

6. Information and Inspection Rights.

6.1 Delivery of Financial Statements. The Company shall deliver to each Rights Holder the following documents or reports:

(i) within ninety (90) days after the end of each fiscal year of the Company, a consolidated income statement and statement of cash flows for the Group for such fiscal year and a consolidated balance sheet for the Group as of the end of the fiscal year, audited and certified by a firm of independent certified public accountants and all prepared in English and in accordance with the Accounting Standards consistently applied throughout the period;

(ii) within thirty (30) days after the end of each quarter of each fiscal year of the Company, unaudited statements of income and cash flows of the Group for such fiscal quarter on a consolidated basis, and an unaudited balance sheet for the Group as of the end of such fiscal quarter, all prepared in English and in accordance with the Accounting Standards consistently applied throughout the period (except for customary year-end adjustments and except for the absence of notes); and

(iii) an annual business and financial plan for the following fiscal year, including a comprehensive operating budget forecasting the Company's revenues, expenses and cash position, no less than sixty (60) days prior to the beginning of such fiscal year, in reasonable detail on a monthly basis, broken down by different operating subsidiaries and associated companies.

6.2 Inspection Rights. The Company covenants and agrees that each Rights Holder shall have the right, to reasonably inspect the books and records of each Group Company at any time during regular working hours and in a manner so as not to interfere with the normal business operations of the Group Company on reasonable prior notice to such Group Company, *provided* that such Rights Holder shall bear the costs for its own representatives and that such inspection shall not be more frequent than once a year. Notwithstanding anything to the contrary herein, each Rights Holder may make reasonable requests for financial information that is reasonably necessary for such Rights Holder's or any of its Affiliate's applicable financial statements, including for any filings of financial statements under the Exchange Act, and the Company shall promptly respond to such requests.

7.7 Preemptive Right.

7.1 General. The Company hereby grants to each holder of Ordinary Shares issued or issuable upon conversion of the Preferred Shares for so long as such holder is not a Defaulting Shareholder (each, a "**Rights Holder**") the right of first refusal to purchase such Rights Holder's Pro Rata Share (as defined below) (and any oversubscription, as provided below), of all (or any part) of any New Securities (as defined below) that the Company may from time to time issue after the date of this Agreement (the "**Preemptive Right**").

7.2 Pro Rata Share. A Rights Holder's "**Pro Rata Share**" for purposes of the Preemptive Rights is the ratio of (a) the number of Ordinary Shares (including Preferred Shares on an as-converted basis) held by such Rights Holder, to (b) the total number of Ordinary Shares (including Preferred Shares on an as-converted basis) then outstanding immediately prior to the issuance of New Securities giving rise to the Preemptive Rights.

7.3 New Securities. For purposes hereof, "**New Securities**" shall mean any Equity Securities of the Company issued after the Closing (as defined in the Share Purchase Agreement), except for:

(i) the Ordinary Shares and/or options or warrants therefor issued to employees, officers, directors, contractors, advisors or consultants of the Group pursuant to the Company's employee share option plans ("**ESOP**") duly approved by the Board, including the Allogene Designees and the Overland Designees;

(ii) any Equity Securities of the Company issued in connection with any share split, share dividend, reclassification or other similar event;

(iii) any Ordinary Shares issued pursuant to bona fide transactions with commercial lenders or lessors in connection with loans, credit arrangements, equipment financings or similar transactions, each such transaction having been approved by the Board, including the Allogene Designees and the Overland Designees;

(iv) any Equity Securities of the Company issued pursuant to the acquisition of another corporation or entity by the Company by consolidation, merger, purchase of assets, or other reorganization in which the Company acquires, in a single transaction or series of related transactions, all or substantially all assets of such other corporation or entity, or fifty percent (50%) or more of the equity ownership or voting power of such other corporation or entity, in any case, duly approved by the Board, including the Allogene Designees and the Overland Designees;

(v) any Equity Securities of the Company issued pursuant to the Company's IPO;

(vi) any Ordinary Shares issued upon the conversion of the Preferred Shares; and

(vii) any Seed Preferred Shares issued pursuant to the Share Purchase Agreement.

7.4 Procedures. In the event that the Company proposes to undertake an issuance of New Securities (in a single transaction or a series of related transactions), it shall give to each Rights Holder written notice of its intention to issue New Securities (the "**Participation Notice**"), describing the amount and type of New Securities, the price and the general terms upon which the Company proposes to issue such New Securities. Each Rights Holder shall have fifteen (15) Business Days from the date of receipt of any such Participation Notice (the "**Notice Period**") to agree in writing to purchase up to such Rights Holder's Pro Rata Share of such New Securities for the price and upon the terms and conditions specified in the Participation Notice by giving written notice to the Company and stating therein the quantity of New Securities to be purchased (not to exceed such Rights Holder's Pro Rata Share). If any Rights Holder fails to so respond in writing within the Notice Period, then such Rights Holder shall forfeit the right hereunder to purchase its Pro Rata Share of such New Securities. Upon the expiration of the Notice Period, the purchaser(s) to which the Company proposes to issue New Securities may, within fifteen (15) Business Days after the expiration of the Notice Period, elect to purchase in aggregate all or any portion of the Available New Securities at the same or higher price and upon nonprice terms not more favorable to the purchasers thereof than specified in the Participation Notice (for the purposes of this Section 7.4, the number of "**Available New Securities**" equals (a) the total number of New Securities that the Company intends to issue as described in the Participation Notice less (b) the number of New Securities that the Rights Holders elect to purchase pursuant to the foregoing). In the event that the purchaser(s) does not elect to purchase in aggregate all of the Available New Securities, immediately after fifteen (15) Business Days of the expiration of the Notice Period, the Company shall promptly notify each Rights Holder that elects to purchase or acquire all the shares available to it (each, a "**Fully Exercising Shareholder**") of the number of Remaining New Securities (for the purposes of this Section 7.4, the number of "**Remaining New Securities**" equals (x) the total number of New Securities that the Company intends to issue as described in the Participation Notice less (y) the number of New Securities that the Rights Holders and the purchaser(s) elect to purchase pursuant to the foregoing). During the ten (10) day period commencing after the Company has given such notice, each Fully Exercising Shareholder may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the Remaining New Securities which is equal to the proportion that the Ordinary Shares issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Shares, by such Fully Exercising Shareholder bears to the Ordinary Shares issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Shares then held, by all Fully Exercising Shareholders who wish to purchase such Remaining New Securities. The closing of any sale pursuant to this Section 7.4 shall occur within one hundred and twenty (120) days of the expiration of the Participation Notice. In the event that the Company has not issued and sold such New Securities within such one hundred and twenty (120) days period, then the Company shall not thereafter issue or sell any New Securities without again first offering such New Securities to the Rights Holders pursuant to this Section 7.4.

8. Limitations on Disposition.

8.1 Transfer Restrictions. Each Shareholder agrees that, for a period of 7 years from the date of this Agreement, such Shareholder shall not, directly or indirectly, sell, assign, transfer, pledge, hypothecate, or otherwise encumber or dispose of in any way or

otherwise grant any interest or right ("**Transfer**") to any Third Party with respect to all or any part of any interest in any Equity Securities owned or held by such Shareholder (each a "**Transferor**") without the prior written consent of the other Shareholder.

8.2 Prohibited Transfers Void. Any Transfer of Equity Securities of the Company not made in compliance with this Section 8 shall be null and void as against the Company, shall not be recorded on the books of the Company and shall not be recognized by the Company or any other Party.

8.3 No Indirect Transfers. Each Transferor agrees not to circumvent or otherwise avoid the transfer restrictions or intent thereof set forth in this Section 8, whether by holding the Equity Securities of the Company indirectly through another Person or by causing or effecting, directly or indirectly, the Transfer or issuance of any Equity Securities by any such Person, or otherwise. Any purported Transfer, sale or issuance of any Equity Securities of any company held by any Transferor holding Shares in the Company (a "**Holding Company**") in contravention of this Agreement shall be void and ineffective for any and all purposes and shall not confer on any transferee or purported transferee any rights whatsoever, and no Party (including without limitation, any Transferor or Holding Company) shall recognize any such Transfer, sale or issuance.

9. Additional Covenants.

9.1 Accounting Standards; Fiscal Year; Internal Controls. The Company shall cause the Group Companies to adopt and maintain December 31 as their fiscal year end and will maintain their books and records in accordance with sound business practices and implement and maintain an adequate system of procedures and controls with respect to finance, management, and accounting that meets international standards of good practice and is reasonably satisfactory to the Board to provide reasonable assurance that (i) transactions by it are executed in accordance with management's general or specific authorization, (ii) transactions by it are recorded as necessary to permit preparation of financial statements in conformity with the Accounting Standards and to maintain asset accountability, (iii) access to assets of it is permitted only in accordance with management's general or specific authorization, (iv) the recorded inventory of assets is compared with the existing tangible assets at reasonable intervals and appropriate action is taken with respect to any material differences, (v) segregating duties for cash deposits, cash reconciliation, cash payment, proper approval is established, and (vi) no personal assets or bank accounts of the employees, directors, officers are mingled with the corporate assets or corporate bank account, and no Group Company uses any personal bank accounts of any employees, directors, officers thereof during the operation of the business.

9.2 No Avoidance; Voting Trust. The Company will not, by any voluntary action, avoid or seek to avoid the observance or performance of any of the terms to be performed hereunder by the Company, and the Company will at all times in good faith assist and take action as appropriate in the carrying out of all of the provisions of this Agreement. Each holder of Shares agrees that it shall not enter into any other agreements or arrangements of any kind with respect to the voting of any Shares or deposit any Shares in a voting trust or other similar arrangement.

9.3 Confidentiality.

(i) The terms and conditions of the Transaction Documents, including their existence, and any information obtained from the Company pursuant to the terms of the Transaction Documents or otherwise (collectively, the "**Confidential Information**") shall be considered confidential information and shall not be disclosed by any of the Parties to any other Person (including, without limitation, any portfolio company of the Overland Group or any other Overland Party) unless such Confidential Information (a) is known or becomes known to the public in general (other than as a result of a breach of this Section 9.3(i) by such Party), (b) is or has been independently developed or conceived by the Shareholder without use of the Company's Confidential Information, or (c) is or has been made known or disclosed to the Party by a third party without a breach of any obligation of confidentiality such third party may have to the other Parties, and except that (x) each Party, as appropriate, may disclose any of the Confidential Information to its current or bona fide prospective investors, prospective permitted transferees, employees, investment bankers, lenders, accountants and attorneys, in each case only where such Persons are under commercially reasonable nondisclosure obligations; (y) the Shareholder may disclose any of the Confidential Information to its fund manager and the employees thereof so long as such Persons are under commercially reasonable nondisclosure obligations; and (z) if any Party is requested or becomes legally compelled (including without limitation, pursuant to the applicable securities laws) to disclose the existence or content of any of the Confidential Information in contravention of the provisions of this Section, such Party shall, to the extent permitted by applicable Law, promptly provide the other Parties with written notice of that fact so that such other Parties may seek a protective order, confidential treatment or other appropriate remedy and in any event shall furnish only that portion of the information that is legally required and shall exercise reasonable efforts to obtain reliable assurance that confidential treatment will be accorded such information.

(ii) The provisions of this Section shall terminate and supersede the provisions of any separate nondisclosure agreement executed by any of the Parties hereto with respect to the transactions contemplated hereby, including without limitation, any term sheet, letter of intent, memorandum of understanding or other similar agreement entered into by the Company and the Shareholders in respect of the transactions contemplated hereby.

9.4 Anti-Bribery Compliance. The Company agrees and covenants to make reasonable efforts to ensure that the Group: (i) complies with all applicable anti-bribery and anti-corruption laws and regulations, including, but not limited to, the U.S. Foreign Corrupt Practices Act and the UK Bribery Act and (ii) implements reasonable policies and procedures designed to prevent any Group Company, or any person acting on its or their behalf, from making any Prohibited Payment in connection with the activities or operations of any of the Group Companies. For purposes of this Section "**Prohibited Payment**" means (a) any offer, gift, payment, promise to pay or authorization of the payment of any money or anything of value, directly or indirectly, to or for the use or benefit of any Public Official (including to or for the use or benefit of any other person if a Group Company knows, or has reasonable grounds for believing, that the other person would use such offer, gift, payment, promise or authorization of payment for the benefit of any such Public Official), for the purpose of influencing any act or decision or omission of any Public Official in order to obtain, retain or direct business to, or to secure any improper benefit or advantage for, a Group Company or any other person, or (b) any conduct constituting a violation of applicable Law involving corruption or bribery; provided that any such offer, gift, payment, promise or authorization of

payment shall not be considered a Prohibited Payment if it is lawful under applicable written laws and regulations, and "**Public Official**" means any executive, official, or employee of a Governmental Authority, political party or member of a political party, political candidate; executive, employee or officer of a public international organization; or director, officer or employee or agent of a wholly owned or partially state-owned or controlled enterprise.

9.5 Insurance. The Company shall obtain, within ninety (90) days of the date hereof, from financially sound and reputable insurers in the Company's reasonable judgment, directors and officers liability insurance in an amount and on terms and conditions satisfactory to the Board, and will use commercially reasonable efforts to cause such insurance policies to be maintained until such time as the Board determines that such insurance should be discontinued.

9.6 Indemnification Matters. The Company hereby acknowledges that one (1) or more of Preferred Directors may have certain rights to indemnification, advancement of expenses and/or insurance provided by one or more of the Shareholders and certain of their Affiliates (collectively, the "**Shareholder Indemnitors**"). The Company hereby agrees (i) that it is the indemnitor of first resort (*i.e.*, its obligations to any such Preferred Director are primary and any obligation of the Shareholder Indemnitors to advance expenses or to provide indemnification for the same expenses or liabilities incurred by such Preferred Director are secondary), (ii) that it shall be required to advance the full amount of expenses incurred by such Preferred Director and shall be liable for the full amount of all expenses, judgments, penalties, fines and amounts paid in settlement by or on behalf of any such Preferred Director to the extent legally permitted and as required by the Memorandum and Articles (or any agreement between the Company and such Preferred Director), without regard to any rights such Preferred Director may have against the Shareholder Indemnitors, and (iii) that it irrevocably waives, relinquishes and releases the Shareholder Indemnitors from any and all claims against the Shareholder Indemnitors for contribution, subrogation or any other recovery of any kind in respect thereof. The Company further agrees that no advancement or payment by the Shareholder Indemnitors on behalf of any such Preferred Director with respect to any claim for which such Preferred Director has sought indemnification from the Company shall affect the foregoing and the Shareholder Indemnitors shall have a right of contribution and/or be subrogated to the extent of such advancement or payment to all of the rights of recovery of such Preferred Director against the Company. The Preferred Directors and the Shareholder Indemnitors are intended thirdparty beneficiaries of this Section 9.6 and shall have the right, power and authority to enforce the provisions of this Section 9.6 as though they were a party to this Agreement.

9.7 Employee Agreements. The Company will cause (i) each Person now or hereafter employed by it or by any of its subsidiaries (or engaged by the Company or any subsidiary as a consultant/independent contractor) with access to confidential information and/or trade secrets to enter into a nondisclosure and proprietary rights assignment agreement; and (ii) subject to the applicable Law, such Person to enter into a noncompetition and nonsolicitation agreement, in each case substantially in the form approved by the Board, including the Allogene Designees and the Overland Designees. In addition, the Company shall not amend, modify, terminate, waive, or otherwise materially alter, in whole or in part, any of the above-referenced agreements or any restricted stock agreement between the Company and any such Person, without the consent of the Board.

9.8 Employee Stock. Unless otherwise approved by the Board, all future employees and consultants of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (i) vesting of shares over a four (4) year period, with the first twenty-five percent (25%) of such shares vesting following twelve (12) months of continued employment or service, and the remaining shares vesting in equal monthly installments over the following thirty-six (36) months, and (ii) a market stand-off provision substantially similar to that in Section 3. Without the prior approval by the Board, the Company shall not amend, modify, terminate, waive or otherwise alter, in whole or in part, any stock purchase, stock restriction or option agreement with any existing employee or service provider if such amendment would cause it to be inconsistent with this Section 9.8. In addition, unless otherwise approved by the Board, the Company shall retain (and not waive) a "right of first refusal" on employee transfers until the Company's IPO and shall have the right to repurchase unvested shares at cost upon termination of employment of a holder of restricted stock.

9.9 Successor Indemnification. If the Company or any of its successors or assignees consolidates with or merges into any other Person and is not the continuing or surviving corporation or entity of such consolidation or merger, then to the extent necessary, proper provision shall be made so that the successors and assignees of the Company assume the obligations of the Company with respect to indemnification of members of the Board as in effect immediately before such transaction, whether such obligations are contained in the Memorandum and Articles, or elsewhere, as the case may be.

9.10 [***].

9.11 Related Party Litigation. In the case of any Related Party Litigation, or facts upon which such an action could be commenced, and upon notification to the Company, the Investor Directors not appointed by the Related Party against whom such Related Party Litigation has been or could be commenced shall be exclusively entitled, on behalf of the Company, to initiate, control, or abandon any such Related Party Litigation, to settle any claims related thereto, and/or to expend reasonable Company resources in the furtherance of the same regardless of whether such resources are provided in the Annual Business Plan.

10. Miscellaneous.

10.1 Termination. This Agreement shall terminate upon mutual consent of the Parties hereto. The provisions of Sections 2, 3, 4, 6, 7, 8 and 9 (except for 6.2, 9.3, 9.6, 9.9, and 9.10) shall terminate on the earliest of the consummation of a QIPO or a Deemed Liquidation Event. If this Agreement terminates, the Parties shall be released from their obligations under this Agreement, except in respect of any obligation stated, explicitly or otherwise, to continue to exist after the termination of this Agreement. This Agreement shall terminate with respect to any shareholder of the Company when such shareholder no longer holds any Shares. If any Party breaches this Agreement before the termination of this Agreement, it shall not be released from its obligations arising from such breach on termination.

10.2 [***] Overland shall become a "**Defaulting Shareholder**" in the event of [***].

10.3 Further Assurances. Upon the terms and subject to the conditions herein, each of the Parties hereto agrees to use its reasonable best efforts to take or cause to be taken all action, to do or cause to be done, to execute such further instruments, and to assist and cooperate with the other Parties hereto in doing, all things necessary, proper or advisable under applicable Laws or otherwise to consummate and make effective, in the most expeditious manner practicable, the transactions contemplated by this Agreement.

10.4 Assignments and Transfers; No Third Party Beneficiaries. For 7 years after the Effective Date, neither Overland nor Allogene may assign this Agreement and rights and obligations hereunder without the other Party's prior written consent, unless (i) to an Affiliate, so long as such Person remains an Affiliate of the transferring Shareholder and the transferring Shareholder remains fully responsible and liable for any action and inaction of its Affiliate or (ii) to a Third Party that acquires (whether by merger, reorganization, acquisition, sale or otherwise) (a) in the case of Allogene as the transferring Shareholder, all or substantially all of the assets of Allogene in the Competing Business or all or substantially all of the equity of Allogene, or (b) all or substantially all of the assets or equity of the transferring Shareholder; provided in each case, the transferring Party shall provide prior notice to the other Shareholder and the Company. Except as otherwise provided herein, this Agreement and the rights and obligations of the Parties hereunder shall inure to the benefit of, and be binding upon, their respective permitted successors, assigns and legal representatives, but shall not otherwise be for the benefit of any Third Party. In the event the rights of any Shareholder hereunder (including, without limitation, registration rights) are assigned (together with the related obligations) to a permitted Third Party in accordance with this Section 10.4, such permitted transferee shall execute and deliver to the Company a deed of adherence or joinder becoming a party hereto as a "Shareholder" subject to the terms and conditions hereof (if not already so bound). This Agreement and the rights and obligations of each other Party hereunder shall not otherwise be assigned without the mutual written consent of the other Parties except as expressly provided herein.

10.5 Governing Law. This Agreement and all actions arising out of or in connection with this Agreement shall be governed by and construed in accordance with the Laws of the State of New York, without regard to the conflicts of Law provisions thereof or of any other jurisdiction which would result in the application of the Laws of any other jurisdiction.

10.6 Dispute Resolution.

(i) ***Disputes***. Subject to Section 10.6(iii), upon the written request of any Party to any other Party, any claim, dispute, or controversy as to the breach, enforcement, interpretation or validity of this Agreement (a "**Dispute**") will be referred to the chief executive officers of the disputing Parties (or their designee with decision-making authority of at least senior vice president level) for attempted resolution. In the event such executives or their designees are unable to resolve such Dispute within sixty (60) days after the initial written request, then, upon the written demand of any disputing Party, the Dispute shall be subject to arbitration, as provided in Section 10.6(ii), except as expressly set forth in Section 10.6(iii).

(ii) ***Arbitration***.

(a) Claims. Subject to Section 10.6(iii) below, any Dispute that is not resolved under Section 10.6(i) within thirty (30) days after a disputing Party's initial written request for resolution, shall be resolved by final and binding arbitration before a panel of three neutral experts with relevant industry experience. The arbitration proceeding shall be administered by the International Court of Arbitration of the International Chamber of Commerce (the "**ICC**") in accordance with its then existing arbitration rules or procedures regarding commercial or business disputes, and the panel of arbitrators shall be selected in accordance with such rules. The arbitration and all associated discovery proceedings and communications shall be conducted in English, and the arbitration shall be held in New York. Except to the extent necessary to confirm an award or as may be required by law, neither a Party nor an arbitrator may disclose the existence, content, or results of arbitration without the prior written consent of the disputing Parties.

(b) Arbitrators' Award. The arbitrators shall, within fifteen (15) days after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The decision or award rendered by the arbitrators shall be final and non-appealable, and judgment may be entered upon it in any court of competent jurisdiction. Any disputing Party may apply for interim injunctive relief with the arbitrators until the arbitration award is rendered or the controversy is otherwise resolved. The arbitrators shall be authorized to award compensatory damages, but shall not be authorized (i) to award non-economic damages, (ii) to award punitive damages or any other damages expressly excluded under this Agreement, or (iii) to reform, modify or materially change this Agreement or any other agreements contemplated hereunder; provided, however, that the damage limitations described in subsections (i) and (ii) of this sentence will not apply if such damages are statutorily imposed.

(c) Costs. Each Party shall bear its own attorneys' fees, costs, and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the arbitrators; provided, however, that the arbitrators shall be authorized to determine whether a Party is the prevailing party, and if so, to award to that prevailing party reimbursement for any or all of its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, photocopy charges, travel expenses, etc.), and/or the fees and costs of the ICC and the arbitrators.

(iii) **Court Actions**. Nothing contained in this Agreement shall deny any Party the right to seek, upon good cause, injunctive or other equitable relief from a court of competent jurisdiction in the context of an emergency or prospective irreparable harm, and such an action may be filed and maintained notwithstanding any ongoing dispute resolution discussions or arbitration proceedings.

10.7 Notices. Any notice required or permitted pursuant to this Agreement shall be given in writing and shall be given either personally or by sending it by next-day or second-

day courier service, fax, electronic mail or similar means to the address of the relevant Party as shown on Schedule A (or at such other address as such Party may designate by fifteen (15) days' advance written notice to the other Parties to this Agreement given in accordance with this Section). Where a notice is sent by next-day or second-day courier service, service of the notice shall be deemed to be effected by properly addressing, pre-paying and sending by next-day or second-day service through an internationally-recognized courier a letter containing the notice, with a written confirmation of delivery, and to have been effected at the earlier of (i) delivery (or when delivery is refused) and (ii) expiration of two (2) Business Days after the letter containing the same is sent as aforesaid. Where a notice is sent by electronic mail, service of the notice shall be deemed to be effected by properly addressing, and sending such notice through a transmitting organization, with a written confirmation of delivery, and to have been effected on the day the same is sent as aforesaid, if such day is a Business Day and if sent during normal business hours of the recipient, otherwise the next Business Day. Notwithstanding the foregoing, to the extent a "with a copy to" address is designated, notice must also be given to such address in the manner above for such notice, request, consent or other communication hereunder to be effective.

10.8 Rights Cumulative; Specific Performance. Each and all of the various rights, powers and remedies of a Party hereto will be considered to be cumulative with and in addition to any other rights, powers and remedies which such Party may have at Law or in equity in the event of the breach of any of the terms of this Agreement. The exercise or partial exercise of any right, power or remedy will neither constitute the exclusive election thereof nor the waiver of any other right, power or remedy available to such Party. Without limiting the foregoing, the Parties hereto acknowledge and agree irreparable harm may occur for which money damages would not be an adequate remedy in the event that any of the provisions of this Agreement were not performed in accordance with their specific terms or were otherwise breached. It is accordingly agreed that the Parties shall be entitled to injunctive relief to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement.

10.9 Severability. In case any provision of the Agreement shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby. If, however, any provision of this Agreement shall be invalid, illegal, or unenforceable under any such applicable Law in any jurisdiction, it shall, as to such jurisdiction, be deemed modified to conform to the minimum requirements of such Law, or, if for any reason it is not deemed so modified, it shall be invalid, illegal, or unenforceable only to the extent of such invalidity, illegality, or limitation on enforceability without affecting the remaining provisions of this Agreement, or the validity, legality, or enforceability of such provision in any other jurisdiction.

10.10 Amendments and Waivers. Any provision in this Agreement may be amended and the observance thereof may be waived (either generally or in a particular instance and either retroactively or prospectively), only by the written consent of (i) the Company; (ii) Overland; and (iii) Allogene. Notwithstanding the foregoing, any Party hereunder may waive any of its rights hereunder without obtaining the consent of any other Party. Any amendment or waiver effected in accordance with this Section shall be binding upon all the Parties hereto.

10.11 No Waiver. Failure to insist upon strict compliance with any of the terms, covenants, or conditions hereof will not be deemed a waiver of such term, covenant, or condition, nor will any waiver or relinquishment of, or failure to insist upon strict compliance with, any right, power or remedy hereunder at any one or more times be deemed a waiver or relinquishment of such right, power or remedy at any other time or times.

10.12 Delays or Omissions. No delay or omission to exercise any right, power or remedy accruing to any Party under this Agreement, upon any breach or default of any other Party under this Agreement, shall impair any such right, power or remedy of such non-breaching or non-defaulting Party nor shall it be construed to be a waiver of any such breach or default, or an acquiescence therein, or of or in any similar breach or default thereafter occurring; nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. Any waiver, permit, consent or approval of any kind or character on the part of any Party of any breach or default under this Agreement, or any waiver on the part of any Party of any provisions or conditions of this Agreement, must be in writing and shall be effective only to the extent specifically set forth in such writing.

10.13 No Presumption. The Parties acknowledge that any applicable Law that would require interpretation of any claimed ambiguities in this Agreement against the Party that drafted it has no application and is expressly waived. If any claim is made by a Party relating to any conflict, omission or ambiguity in the provisions of this Agreement, no presumption or burden of proof or persuasion will be implied because this Agreement was prepared by or at the request of any Party or its counsel.

10.14 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. E-mailed copies of signatures shall be deemed to be originals for purposes of the effectiveness of this Agreement.

10.15 Entire Agreement. This Agreement (including the Exhibits hereto) constitutes the full and entire understanding and agreement among the Parties with regard to the subjects hereof, and supersedes all other agreements between or among any of the Parties with respect to the subject matter hereof.

10.16 Agreement Controlling. In the event of any conflict or inconsistency between any of the terms of this Agreement and any of the terms of the Memorandum and Articles or any of the Charter Documents for any of the Group Companies other than the Company, or in the event of any dispute related to any such Charter Document, the terms of this Agreement shall prevail in all respects, the Parties shall give full effect to and act in accordance with the provisions of this Agreement over the provisions of the Charter Documents, and the Parties hereto shall exercise all voting and other rights and powers (including to procure any required alteration to such Charter Documents to resolve such conflict or inconsistency) to make the provisions of this Agreement effective, and not to take any actions that impair any provisions in this Agreement.

10.17 Aggregation of Shares. All Shares held or acquired by any Affiliates shall be aggregated together for the purpose of determining the availability of any rights of any Shareholder, under this Agreement.

10.18 Use of English Language. This Agreement has been executed and delivered in the English language. Any translation of this Agreement into another language shall have no interpretive effect. All documents or notices to be delivered pursuant to or in connection with this Agreement shall be in the English language or, if any such document or notice is not in the English language, accompanied by an English translation thereof, and the English language version of any such document or notice shall control for purposes thereof.

10.19 Effective Date. This Agreement shall only take effect and become binding on and enforceable against the Parties subject to and upon the Closing (as defined in the Share Purchase Agreement) (the "**Effective Date**").

[*The remainder of this page has been intentionally left blank.*]

IN WITNESS WHEREOF, the parties hereto have caused their respective duly authorized representatives to execute this Agreement on the date and year first above written.

COMPANY:

Allogene Overland Biopharm (CY) Limited

By: /s/ Ed Zhang
Name: Ed Zhang
Title: Director

SIGNATURE PAGE OF SHAREHOLDERS' AGREEMENT

IN WITNESS WHEREOF, the parties hereto have caused their respective duly authorized representatives to execute this Agreement on the date and year first above written.

SHAREHOLDER:

Allogene Therapeutics, Inc.

By: /s/ David Chang
Name: David Chang
Title: CEO and President

IN WITNESS WHEREOF, the parties hereto have caused their respective duly authorized representatives to execute this Agreement on the date and year first above written.

SHAREHOLDER:

Overland Pharmaceuticals (CY) Inc.

By: /s/ Ed Zhang

Name: Ed Zhang

Title: Chief Operating Officer and Chief Business Officer

SIGNATURE PAGE OF SHAREHOLDERS' AGREEMENT

SCHEDULE A

ADDRESS FOR NOTICES

If to the Company:

Address: c/o Walkers Corporate Limited
Cayman Corporate Centre
27 Hospital Road
George Town, Grand Cayman
KY1-9008, Cayman Islands
Attention: Allogene Overland Biopharm (CY) Limited – The Corporate Administrator

If to Allogene:

Allogene Therapeutics, Inc.	Address: 210 East Grand Avenue, South San Francisco, CA 94080 Attention: General Counsel Email: [***] with a copy to: Goodwin Procter LLP Address: The New York Times Building, 620 8th Avenue, New York, NY 10018 Attention: Wendy Pan Email: [***]

If to Overland:

Overland Pharmaceuticals (CY) Inc.	Address: John Hancock Tower, 25th Floor, 200 Clarendon Street, Boston, MA 02116 Attention: Ed Zhang Email: [***] with a copy to: Gunderson Dettmer Stough Villeneuve Franklin & Hachigian, LLP Address: One Marina Park Drive, Suite 900, Boston, MA 02210 Attn: Timothy H. Ehrlich Email: [***]

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statements (Forms S-8 Nos. 333-227965, 333-230164 and 333-236701) Amended and Restated 2018 Equity Incentive Plan and 2018 Employee Stock Purchase Plan of Allogene Therapeutics, Inc., and
(2) Registration Statement (Form S-3 No. 333-234516) of Allogene Therapeutics, Inc.;

of our reports dated February 25, 2021, with respect to the consolidated financial statements of Allogene Therapeutics, Inc. and the effectiveness of internal control over financial reporting of Allogene Therapeutics, Inc. included in this Annual Report (Form 10-K) of Allogene Therapeutics, Inc. for the year ended December 31, 2020.

/s/ Ernst & Young LLP

San Jose, California
February 25, 2021

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, David Chang, M.D., Ph.D., certify that:

1. I have reviewed this Annual Report on Form 10-K of Allogene Therapeutics, 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 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 13(a)-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 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: February 25, 2021

By: /s/ David Chang, M.D., Ph.D.
David Chang, M.D., Ph.D.
President 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, Eric Schmidt, Ph.D., certify that:

1. I have reviewed this Annual Report on Form 10-K of Allogene Therapeutics;

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 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 13(a)-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 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: February 25, 2021 By: /s/ Eric Schmidt, Ph.D

Eric Schmidt, Ph.D.
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

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 Allogene Therapeutics, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2020, to which this Certification is attached as Exhibit 32.1, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David Chang, M.D., Ph.D., President and Chief 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:

(1) The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended; 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: February 25, 2021 By: /s/ David Chang, M.D., Ph.D.

David Chang, M.D., Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

This certification accompanies the Form 10-K 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 Allogene Therapeutics, 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 Form 10-K), irrespective of any general incorporation language contained in such filing.

Exhibit 32.2

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 Allogene Therapeutics, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2020, to which this Certification is attached as Exhibit 32.2, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Eric Schmidt, Ph.D., Chief Financial 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:

(1) The Report fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended; 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: February 25, 2021 By: /s/ Eric Schmidt, Ph.D

Eric Schmidt, Ph.D.
Chief Financial Officer
(Principal Financial and Accounting Officer)

This certification accompanies the Form 10-K 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 Allogene Therapeutics, 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 Form 10-K), irrespective of any general incorporation language contained in such filing.