Filed Pursuant to Rule 424(b)(4)
Registration Statement No. 333-257604
Registration Statement No. 333-258105

PROSPECTUS

19,000,000 Shares

Common Stock

This is Caribou Bioscience, Inc.'s initial public offering. We are selling 19,000,000 shares of our common stock.

The initial public offering price for our common stock is $16.00 per share. Prior to this offering, there has been no public market for our common stock. Our common stock has been approved for listing on the Nasdaq Global Select Market under the symbol "CRBU."

We are an "emerging growth company" under the federal securities laws and are subject to reduced public company disclosure standards. See the section titled "Prospectus Summary—Implications of Being an Emerging Growth Company."

Investing in our common stock involves risks that are described in the "Risk Factors" section beginning on page 16 of this prospectus.

	Per Share	Total
Public offering price	$ 16.00	$304,000,000
Underwriting discount (1)	$ 1.12	$ 21,280,000
Proceeds, before expenses, to us	$ 14.88	$282,720,000

(1) We refer you to "Underwriting" beginning on page 219 of this prospectus for additional information regarding underwriting compensation.

The underwriters may also exercise their option to purchase up to an additional 2,850,000 shares of common stock from us, at the initial public offering price, less the underwriting discount, for 30 days after the date of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The shares will be ready for delivery on or about July 27, 2021.

Joint Book-Running Managers

BofA Securities **Citigroup** **SVB Leerink**

The date of this prospectus is July 22, 2021.

TABLE OF CONTENTS

We and the underwriters have not authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We and the underwriters take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The information contained in this prospectus or in any applicable free writing prospectus is accurate only as of the date of this prospectus or any such free writing prospectus, as applicable, regardless of its time of delivery or of any sale of our common stock. Our business, financial condition, results of operations, and future growth prospects may have changed since that date.

For investors outside the United States: Neither we nor any of the underwriters have done anything that would permit this offering or possession or distribution of this prospectus in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside of the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of our common stock and the distribution of this prospectus outside of the United States.

Trademarks

We have registered Caribou Biosciences, Caribou, Site-Seq, and our logo as trademarks in the United States and certain other jurisdictions. This prospectus contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and trade names referred to in this prospectus, including logos, artwork, and other visual displays, may appear without the ® or ™ symbols, but in the case of our trademarks and trade names or those of our licensors, such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names. We do not intend our use or display of other entities' trade names, trademarks, or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

PROSPECTUS SUMMARY

This summary highlights information included elsewhere in this prospectus. This summary does not contain all the information you should consider before investing in our common stock. You should read and consider this entire prospectus carefully, including the sections titled "Risk Factors," "Special Note Regarding Forward-Looking Statements" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere in this prospectus, before making any investment decision. Unless the context otherwise requires, the terms "Caribou," "Caribou Biosciences," the "Company," "we," "us" and "our" relate to Caribou Biosciences, Inc., together with its consolidated subsidiaries.

Overview

We are a clinical-stage biopharmaceutical company dedicated to transforming the lives of patients with devastating diseases by applying our novel CRISPR platform, **C**RISPR **h**ybrid **R**NA-**DNA**, or chRDNA, pronounced "chardonnay," toward the development of next-generation, genome-edited cell therapies. Our renowned founders, including a Nobel laureate, are pioneers in CRISPR genome editing. Our chRDNA technology has demonstrated superior specificity and high efficiency in preclinical studies, which enables us to perform multiple, precise genomic edits, while maintaining genomic integrity.

We believe that our technology has broad potential to generate gene and cell therapies in oncology and in therapeutic areas beyond oncology, including immune cell therapies, cell therapies derived from genome-edited iPSCs, and *in vivo* genome-editing therapies.

The genome-editing technologies currently used in the allogeneic cell therapy field generally have limited efficiency, specificity, and versatility for performing the multiple, precise genomic edits necessary to address insufficient persistence. Our chRDNA technology is designed to address these genome-editing limitations and improve cell therapy activity. By applying this approach to allogeneic cell therapies, we believe we can unlock their full potential by improving upon their effectiveness and durability.

We are initially focused on advancing multiple proprietary allogeneic cell therapies for the treatment of both hematologic malignancies and solid tumors against cell surface targets for which autologous CAR-T cell therapeutics have previously demonstrated clinical proof of concept, including both CD19 and BCMA, as well as new targets. We use our chRDNA technology to enhance, or armor, our cell therapies by creating additional genomic edits to improve persistence of antitumor activity. The current status of our programs is summarized below.

Proprietary pipeline

Program	Cell type	Target	Editing	Indications	Discovery	IND enabling	Phase 1	Phase 2	Phase 3*	Anticipated milestones
CB-010	T cell	CD19	CAR into TRAC armoring: PD-1 KO	r/r B-NHL	●	●	●	○	○	initial data expected in 2022
CB-011	T cell	BCMA	CAR into TRAC armoring: B2M KO, B2M-HLA-E insertion	r/r MM	●	○	○	○	○	IND filing 2022
CB-012	T cell	CD371	armoring	r/r AML	●	○	○	○	○	IND filing 2023
CB-020	iNK cell	undisclosed	armoring	solid tumors	●	○	○	○	○	target selection 2022

* Phase 3 may not be required if phase 2 is registrational.

Our first lead product candidate, CB-010, is, to our knowledge, the first clinical-stage allogeneic anti-CD19 CAR-T cell therapy with PD-1 removed from the CAR-T cell surface by a genome-edited knockout of the

PDCD1 gene. We have demonstrated in preclinical models that the PD-1 knockout improves the persistence of antitumor activity by disrupting a pathway that leads to rapid T cell exhaustion. We have dosed the first patient in our ANTLER phase 1 clinical trial for CB-010, a study in patients with relapsed or refractory B cell non-Hodgkin lymphoma, with initial data expected in 2022.

Our second lead product candidate, CB-011, is an allogeneic CAR-T cell product candidate and is, to our knowledge, the first anti-BCMA CAR-T cell therapy incorporating an immune cloaking approach that includes both the removal of the endogenous B2M protein and insertion of a B2M–HLA-E transgene. This strategy is designed to blunt CAR-T cell rejection by both patient T cells and NK cells to enable more durable antitumor activity. CB-011 is in preclinical development for relapsed or refractory multiple myeloma, with an IND filing expected in 2022.

Our CB-012 program is an allogeneic armored CAR-T cell therapy targeting CD371, currently in preclinical development for the treatment of relapsed or refractory acute myeloid leukemia with an IND filing expected in 2023. CD371 is an attractive target for acute myeloid leukemia due to its expression on myeloid cancer cells, its enrichment in leukemic stem cells, and its absence on hematopoietic stem cells.

We are also developing allogeneic CAR-NK cell therapies derived from genome-edited iPSCs for the treatment of solid tumors. These CAR-NK product candidates will contain genomic edits designed to overcome the challenges of targeting solid tumors, including trafficking, heterogeneity, and the immunosuppressive tumor microenvironment.

We control a robust patent portfolio protecting our chRDNA technology as well as certain of our allogeneic cell therapy targets.

In February 2021, we entered into a collaboration with AbbVie Manufacturing Management Unlimited Company, or AbbVie, to develop two new CAR-T cell therapies for AbbVie. We view this collaboration as an external recognition of the potential for our chRDNA genome-editing technology to significantly improve genome-editing specificity and efficiency.

Current Challenges in Allogeneic Cell Therapies

Immune cell therapies have emerged as a revolutionary and potentially curative treatment for hematologic malignancies and solid tumors. The approval and launch of multiple first generation CD19- or BCMA-directed autologous CAR-T cell products have laid the foundation and opened a path for the development of more advanced cell therapeutics, including CAR-T and CAR-NK cell products with next-generation capabilities and approaches. Among these approaches, allogeneic cell therapy is positioned to unlock the broad potential of engineered immune cells as a leading therapeutic modality. However, expansion, persistence, and trafficking of allogeneic CAR-T and CAR-NK cells are critical to achieving long-term efficacy. We believe that the genome-editing technologies currently utilized in the allogeneic cell therapy field have limited efficiency, specificity, and versatility for performing the multiplex editing necessary to address these challenges.

Genome-Editing Landscape and Limitations

There are several well-established genome-editing technologies being applied to generate immune cell therapies currently in preclinical research or clinical development, including ZFNs, TALENs, and meganucleases, but each has limitations with respect to both their agility and their ability to generate site-specific gene insertions with high efficiency. More recently, clustered regularly interspaced short palindromic repeats, or CRISPR, genome-editing technology has been used for the generation of *ex vivo* immune cell therapeutics that are in preclinical research or clinical development.

The canonical CRISPR system utilizes Cas9, a protein that can cut genomic DNA. Cas9 is targeted to a specific site in a genome by a guide RNA. One of the drawbacks of CRISPR-Cas9 genome editing is the occurrence of off-target editing. Off-target edits can alter an oncogene or tumor suppressor gene, impact the biology of the target cell, or have other negative consequences on therapeutic development. Additionally, the simultaneous occurrence of both on-target and off-target edits may lead to genomic rearrangements including chromosomal translocations that may be problematic for immune cell therapeutics, especially for ones requiring multiple edits.

Our chRDNA Technology

We have invented a new CRISPR genome-editing platform, our chRDNA technology, which uses novel and proprietary hybrid guides for editing DNA, providing a powerful tool with the potential to expand the use of allogeneic cell therapies. See figure 1. The advantages of our technology include:

- *Significantly improved genome-editing specificity*: The use of our chRDNA guides leads to a high degree of editing specificity with lower levels of off-target events compared to first generation CRISPR-Cas9. See figure 2.
- *High efficiency*: We achieve a high degree of on-target gene knockout and insertion efficiency, facilitating robust multiplex editing including multiple gene insertions. See figure 2.
- *Versatility across a broad range of cell types*: Our chRDNA guides are compatible with multiple types of Cas proteins, including Cas9 and Cas12a, providing us the flexibility to apply our technology to many cell types including immune cells and stem cells.
- *Simple chemical synthesis*: Our chRDNA guides are manufactured via chemical synthesis using readily available technologies.

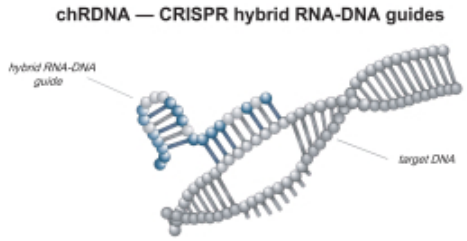

Figure 1. *Our chRDNA guides are hybrid molecules that contain both RNA and DNA nucleotides. They enable significantly improved specificity compared to first generation all-RNA guides.*

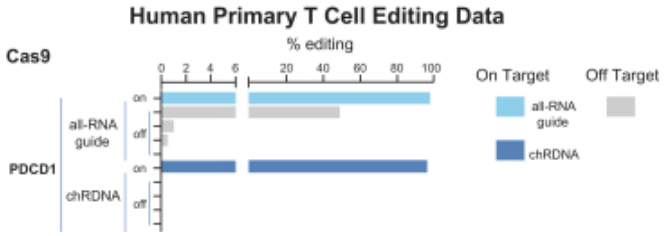

Figure 2. *chRDNA guides significantly improve genome-editing specificity relative to all-RNA guides. We edited the gene encoding PD-1, called PDCD1, in the same genomic location using either an all-RNA guide or a chRDNA guide. In this instance, the all-RNA guide results in multiple, high efficiency off-target edits, whereas the chRDNA guide yields no off-target editing down to our limit of detection.*

We have successfully demonstrated multiplex genome editing with our chRDNA technology, including multiplex gene insertion. We believe this level of editing sophistication has the potential to unlock the broad use of allogeneic cell therapies by:

- *Increasing the persistence of allogeneic cell therapies, thereby potentially achieving long-term efficacy:* Our chRDNA technology enables us to apply multiple orthogonal approaches to armor

allogeneic CAR-T cells, including (i) knockout of PD-1 to disrupt a pathway that leads to CAR-T cell exhaustion and (ii) immune cloaking CAR-T cells to prevent rapid rejection by the patient's immune system. See figure 3. Our preclinical mouse xenograft data demonstrate that the PD-1 knockout results in a significant survival advantage compared to conventional allogeneic CAR-T cells without a PD-1 knockout. See figure 4.

- *Improving the genomic integrity of our products*: We have observed that our product candidates have significantly lower levels of off-target edits compared to those made with first generation CRISPR-Cas9, and we believe we can make multiple edits while maintaining genomic integrity.

- *Expanding into solid tumors*: We are also focused on developing genome-edited, off-the-shelf CAR-NK cell therapies for the treatment of solid tumors. In our preclinical studies to date, we have observed that our chRDNA technology can precisely edit iPSCs and through a proprietary process, we generate genome-edited, iNK cells that are armored to enhance efficacy, trafficking, targeting, and/or persistence.

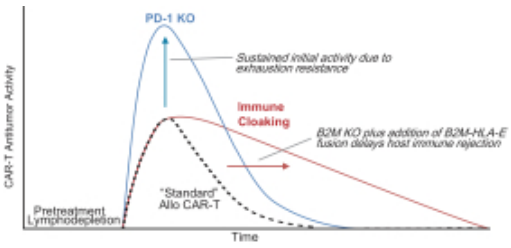

Figure 3. *We employ multiple armoring strategies to improve allogeneic CAR-T cell persistence.*

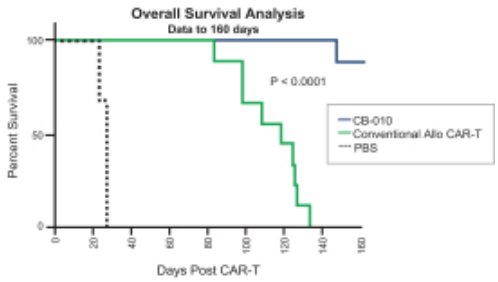

Figure 4. *In vivo preclinical mouse xenograft data demonstrate that the PD-1 knockout results in a significant survival advantage relative to a conventional allogeneic CAR-T cell therapy that expresses PD-1.*

Our Pipeline

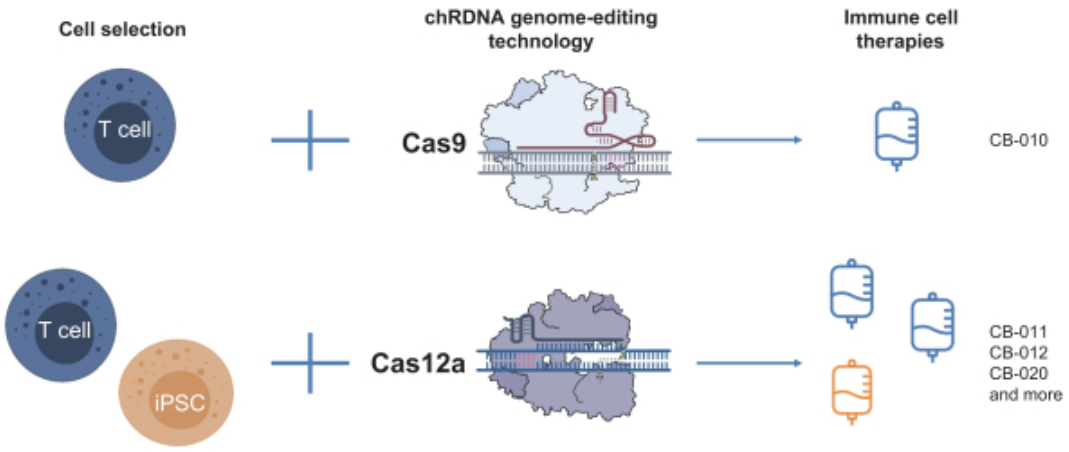

Figure 5. *We use Cas9 and Cas12a in the development of our allogeneic cell therapies.*

CB-010

Our most developed product candidate is CB-010, an allogeneic anti-CD19 CAR-T cell therapy. We use Cas9 chRDNA guides to make three edits to manufacture CB-010. We introduce, with high efficiency and specificity, the gene encoding the CD19-specific CAR into the gene encoding the T cell receptor alpha constant, or *TRAC*, a component of the native T cell receptor, or TCR. This simultaneously integrates the CD19 CAR site-specifically into the T cell genome and eliminates TCR expression to reduce the risk of graft versus host disease, or GvHD. We also knock out the gene encoding the PD-1 protein in these cells to boost the persistence of CAR-T cell antitumor activity. We believe that the PD-1 knockout has the potential to reduce the likelihood of rapid tumor recurrence and potentially confer a better therapeutic index compared to other allogeneic CAR-T cells. To our knowledge, CB-010 is the first allogeneic CAR-T cell therapy with a PD-1 knockout in clinical studies and it is being evaluated in our open-label, multicenter ANTLER phase 1 clinical trial in the United States in adults with relapsed or refractory B cell non-Hodgkin lymphoma (NCT04637763). We have dosed the first patient in this clinical trial. We expect to have initial data from this clinical trial in 2022.

CB-011

CB-011 is an allogeneic, BCMA CAR-T cell therapy for the treatment of relapsed or refractory multiple myeloma. To our knowledge, CB-011 will be the first allogeneic CAR-T cell therapy immune cloaked to prevent both T- and NK-mediated clearance, or rejection, by the immune system. We expect our immune cloaking strategy to drive CAR-T cell persistence, enabling more durable antitumor activity. We use Cas12a chRDNA guides to make four edits to manufacture CB-011. We introduce the gene that encodes a novel and proprietary humanized anti-BCMA CAR into the *TRAC* locus with high specificity and efficiency, thus eliminating TCR expression to prevent GvHD and integrating the BCMA CAR site-specifically into the T cell genome. In addition, we insert a gene encoding a B2M–HLA-E fusion protein into the native *B2M* gene locus. This approach simultaneously prevents the expression of the native B2M protein, a protein that stabilizes all HLA class I antigens on the cell surface, thereby eliminating endogenous HLA class I presentation on the surface of the CAR-T cells, and stably expresses HLA-E, a minor HLA class I antigen, to blunt both T- and NK-mediated rejection of the CAR-T cell therapy by the patient's immune system. We expect to file an IND for this product candidate in 2022.

CB-012

CB-012 is an allogeneic, anti-CD371 CAR-T cell therapy for the treatment of relapsed or refractory acute myeloid leukemia. CD371 is expressed on the surface of acute myeloid leukemia tumor cells and leukemic stem cells, but it is not expressed on normal hematopoietic stem cells which makes it a compelling target for the treatment of acute myeloid leukemia. We are applying our genome-editing expertise to armor the CB-012 CAR-T cell product candidate in order to drive persistence and seek maximum patient benefit in relapsed or refractory acute myeloid leukemia. We expect to file an IND for this product candidate in 2023.

CB-020

We believe that edited iNKs, including CAR-iNKs, hold significant potential for treating a variety of solid tumors. We have successfully demonstrated the ability to edit the genome of iPSCs at multiple loci and we have developed a robust differentiation protocol to derive iNKs from iPSCs, providing an optimal system for generating multiplex-edited iNKs that have the potential to address the fundamental challenges facing immune cell therapies in the immunosuppressive tumor microenvironment. We expect to select a cell-surface target for our CB-020 product candidate in 2022.

Our History

Our Team

Our team and our culture are critical to realizing our vision of advancing agile genome-editing innovations for the benefit of our communities. We were founded in 2011 by globally-recognized leaders in CRISPR and nucleic acid biology: Jennifer A. Doudna, Ph.D., who was a co-recipient of the 2020 Nobel Prize in Chemistry for the development of CRISPR-Cas9 as a method for genome editing; Martin Jinek, Ph.D., Assistant Professor at the University of Zurich in the Department of Biochemistry; James Berger, Ph.D., Professor in the Department of Biophysics and Biophysical Chemistry at the Johns Hopkins University School of Medicine; and Rachel E. Haurwitz, Ph.D., who has served as our President and Chief Executive Officer since our founding. Drs. Doudna and Jinek serve on our SAB, which also includes world experts in immuno-oncology therapeutics, T cell metabolism and tumor interactions, iPSC biology and differentiation, clinical trial development, and patient care.

We have attracted a talented group of experienced scientists, drug development experts, and company builders as part of a passionate team of over 65 employees. Throughout their combined careers, our team members have contributed to at least 49 IND submissions; 94 clinical trials, of which 40 were for oncology indications; 13 product approvals; and 11 product launches. Our research and development team includes scientists, engineers, and clinicians who are experts in genome-editing technologies, cellular engineering, computational biology, genome sequencing and analysis, structural biology, chemistry, lab automation, translational medicine, and the manufacturing of CRISPR reagents and cell therapies. Our team includes many of the scientists and engineers who invented the technologies we use today in our research and product development, including Paul Donohoue, a co-inventor of the chRDNA genome-editing technology, who continues to drive innovation as the leader of our platform discovery group.

We are driven by our shared values. We open our minds to new ideas and welcome diverse perspectives. We proudly assert that teams do their best work when their members are personally engaged, their ideas are taken seriously, their contributions are recognized, and their needs are met.

Our Values

- *Leaders in Genome Editing*: Passionate and relentless in our pursuit of innovation
- *Collaboration*: Shaping a better future together
- *Scientific Excellence*: Innovating solutions to advance scientific applications
- *Community Engagement*: Addressing society's needs through open dialogue
- *Integrity*: Operating with the highest level of integrity
- *Personal Development*: Empowering and supporting one another
- *Respectful and Inclusive*: Everyone is a necessary contributor to our success

Our Key Investors and our Financing History

Since our founding in 2011, we have raised approximately $150.1 million in net proceeds from equity capital invested by leading venture capital funds, healthcare-dedicated funds, other institutional investors, and strategic

investors to advance our technology platforms and therapeutic pipeline. Our institutional investors include Adage Capital Partners, Anterra F&A Ventures, Avego Bioscience Capital, Avidity Partners, Invus, a fund affiliated with Farallon Capital Management, F-Prime Capital Partners Healthcare Fund IV LP, Heritage Medical Systems, Janus Henderson Investors, LifeSci Venture Partners, Maverick funds, Mission Bay Capital, Monashee Investment Management, funds affiliated with PFM Health Sciences, Point72, Ridgeback Capital Investments, Pontifax Global Food and Agriculture Technology Fund, and funds managed by Tekla Capital Management. Our corporate and strategic investors include AbbVie, DuPont, Genus, The Leukemia & Lymphoma Society Therapy Acceleration Program, and Novartis. Additionally, since our founding, we have received approximately $161.1 million from various licensing, collaboration, patent assignment, and service agreements as well as government grants, including approximately $88.4 million in net proceeds from the sale of Intellia Therapeutics, Inc., or Intellia, common stock received as consideration for our CRISPR-Cas9 license agreement with Intellia, and $30.0 million received from AbbVie as an upfront payment for our collaboration and license agreement with AbbVie. Thus, to date, we have received a total of approximately $311.2 million in net proceeds from equity financings and contract revenues.

Intellectual Property

Since our founding in 2011, we have invented and acquired intellectual property covering chRDNA genome editing as well as additional genome-editing and cell therapy technologies. As of the date of this prospectus, we own 48 issued U.S. patents, including 7 U.S. patents covering our chRDNA technology; 218 issued foreign patents; and 85 pending patent applications throughout the world. Our portfolio includes granted U.S. patents covering methods and compositions relating to the anti-BCMA binding domain of our CB-011 product candidate. We have exclusively in-licensed intellectual property covering the anti-CD371 binding domains of our CB-012 product candidate from Memorial Sloan Kettering Cancer Center, or MSKCC. Additionally, we have extensive patent protection on CRISPR Type I systems, CRISPR-Cas9 methods and compositions, and other genome-editing technologies. Without any patent term extension, the earliest expiration dates of our granted U.S. patents are in 2032 and the latest expiration dates of our granted U.S. patents are in 2040. We also rely on trade secrets to protect aspects of our manufacturing that are not amenable to patent protection or infringement detection.

Under an exclusive license agreement with The Regents of the University of California, or UC, and the University of Vienna, or Vienna, we have a worldwide license, with the right to sublicense, in all fields to the foundational CRISPR-Cas9 patent family co-owned by UC, Vienna, and Dr. Emmanuelle Charpentier, or the CVC IP. To date, we have entered into over 20 sublicensing agreements with third parties under which we have granted rights to the CVC IP and other Cas9 intellectual property owned or controlled by us in a variety of fields such as human therapeutics, agriculture, research reagents, transgenic animals, certain livestock targets, internal research, bioproduction, cell lines, microbial applications, and forestry.

Manufacturing

We have built an efficient and scalable manufacturing process, and our process development organization works with several selected contract manufacturing organizations, or CMOs. Our allogeneic CAR-T cell approach utilizes healthy donor T cells, which we believe provides an enhanced and more cost-effective manufacturing process compared to autologous CAR-T cell manufacturing. In addition, we have optimized the process to achieve a high level of cell recovery and activity through enhanced culture conditions, timing, early stage of differentiation, and use of qualified materials. We have developed analytical methods to ensure high integrity of the CAR-T cells based upon our manufacturing process and quality controls. Furthermore, we will be initiating process development to manufacture iPSCs (adult somatic cells genetically reprogrammed to a stem cell-like state) that will enable us to develop genome-edited, iPSC-derived CAR-NK cell therapeutics for targeting solid tumors.

We rely on CMOs for the manufacture of our product candidates for clinical use, and most of these CMOs have demonstrated capability in preparation of materials for commercialization. We conduct our own process development internally prior to transferring our methodologies to the CMO that manufactures our cGMP cell products. We may build our own manufacturing facility in the future to provide us greater flexibility and control over our clinical and/or commercial manufacturing needs.

Our Strategy

Our purpose is to develop transformative genome editing-based therapies for devastating human diseases. Our goal is to build an integrated company that discovers, develops, manufactures, and commercializes genome editing-based therapies that hold the potential to significantly impact a wide range of diseases.

Key components of our strategy include:

- *Applying our chRDNA platform to the clinically evaluated cell-surface targets CD19 and BCMA to develop allogeneic CAR-T cell therapies with improved persistence of antitumor activity.*
- *Developing additional allogeneic CAR-T cell product candidates for the treatment of hematologic malignancies.*
- *Expanding our cell therapy pipeline to include cell therapies for the treatment of solid tumors and metastases by leveraging our iNK cell therapy platform.*
- *Reinforcing our leadership in CRISPR genome editing through strategic investments in our platform and new technologies.*
- *Further expanding patient access to our cell therapies via selective strategic collaborations, such as our collaboration with AbbVie.*
- *Pursuing indications both within and outside of oncology on our own and through selective strategic collaborations.*

Recent Developments

Preliminary unaudited cash and cash equivalents as of June 30, 2021

On a preliminary unaudited basis, we expect our cash and cash equivalents as of June 30, 2021 to be approximately $129.6 million (including restricted cash of approximately $50,000). This estimate of cash and cash equivalents is our preliminary estimate based on currently available information and does not present all necessary information for an understanding of our financial condition as of June 30, 2021 or our results of operations for the six months ended June 30, 2021. As we complete our quarter-end financial close process and finalize our financial statements for the six months ended June 30, 2021, we will be required to make significant judgments in a number of areas that may result in the estimate provided herein being different than the final reported cash and cash equivalents. This preliminary estimate has been prepared by and is the responsibility of our management. Our independent registered public accounting firm has not audited, reviewed, or performed any procedures with respect to this preliminary estimate or the accounting treatment thereof and does not express an opinion or any other form of assurance with respect thereto. We expect to complete our financial statements for the six months ended June 30, 2021 subsequent to the completion of this offering. It is possible that we or our independent registered public accounting firm may identify items that require us to make adjustments to the preliminary estimated cash and cash equivalents balance set forth above and those changes could be material.

Accordingly, undue reliance should not be placed on this preliminary estimate. The preliminary estimate is not necessarily indicative of any future period and should be read together with the sections titled "Risk Factors," "Special Note Regarding Forward-looking Statements" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" for additional information regarding factors that could result in differences between the preliminary estimate and the actual results we will report for cash and cash equivalents as of June 30, 2021.

Summary of Risk Factors

Our business is subject to a number of risks of which you should be aware before making a decision to invest in our common stock. These risks are more fully described in the section titled "Risk Factors" immediately following this prospectus summary. These risks include, among others, the following:

- We have incurred significant net operating losses since our inception and anticipate that we will incur continued losses for the foreseeable future.
- Even if this offering is successful, we will need substantial additional financing to develop our product candidates and implement our operating plans. If we fail to obtain additional financing, we may be delayed or unable to complete the development and commercialization of our product candidates.
- We have a limited operating history, which may make it difficult to evaluate our technologies and product candidate development capabilities or to predict our future performance.
- We are early in our development efforts and it will be many years before we commercialize a product candidate, if ever. If we are unable to advance our product candidates through clinical trials, obtain regulatory approval, and ultimately commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.
- Our product candidates are cell therapies generated by novel chRDNA genome-editing technologies, which makes it difficult to predict the time and cost of developing our product candidates and obtaining regulatory approval. To date, no other products that use these genome-editing technologies have advanced into clinical trials or received marketing approval in the United States.
- Our business is highly dependent on the success of our lead product candidates, including CB-010 and CB-011, which will require significant additional preclinical and clinical testing before we can seek regulatory approval and potentially commercially launch our product candidates. If we are unable to advance our preclinical studies and clinical trials, obtain approval for, and successfully commercialize, our lead product candidates for the treatment of patients in approved indications or if we are significantly delayed in doing so, our business would be significantly harmed.
- If we experience delays or difficulties enrolling patients in the clinical trials for our product candidates, including our ANTLER phase 1 clinical trial, our ability to advance CB-010 and our other product candidates through clinical development and the regulatory process could be delayed or prevented.
- Our clinical trials may fail to demonstrate adequately the safety and efficacy of any of our product candidates and the development of our product candidates may be delayed or unsuccessful, which could prevent or delay regulatory approval and commercialization.
- If our product candidates cause serious adverse events or undesirable side effects, including injury and death, or have other properties that could delay or prevent regulatory approval, their commercial potential may be limited or extinguished.

- We face significant competition from other biotechnology and pharmaceutical companies, which may result in other companies developing or commercializing products before, or more successfully than, we do, thus rendering our product candidates non-competitive or reducing the size of our market, and our operating results will suffer if we fail to compete effectively.
- If we do not possess intellectual property rights covering our proprietary chRDNA genome-editing technology and product candidates, we may not be able to block competitors or to compete effectively in our markets.
- Third-party claims of intellectual property infringement may prevent or delay our ability to commercialize our product candidates.
- Our rights to develop and commercialize our product candidates are subject to the terms and conditions of licenses and assignments with third parties, and if we fail to comply with our obligations under these agreements, we could lose these intellectual property rights and be subject to litigation from our licensors or assignors.
- Our ability to continue to receive licensing revenues and to enter into new licensing arrangements will be substantially impaired if the CVC IP is limited by administrative patent proceedings.
- We rely on third parties to supply the materials for, and the manufacturing of, our clinical supplies, and we may continue our reliance on third parties for manufacturing of our commercial products, if approved.
- We may not be able to meet our obligations under the AbbVie collaboration or our own product candidates and pipeline may be delayed in light of our obligations to AbbVie. In addition, we have limited control over the achievement of milestones by AbbVie.
- Our future success depends on our ability to retain key executive officers and to attract, retain, and motivate qualified personnel.
- We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

Corporate and Other Information

We were founded in October 2011 as a Delaware corporation. Our principal executive offices are located at 2929 7th Street, Suite 105, Berkeley, California 94710 and our telephone number is (510) 982-6030.

Our website address is *www.cariboubio.com*. The information on, or that can be accessed through, our website is not part of this prospectus and is not incorporated by reference herein. We have included our website address as an inactive textual reference only.

Implications of Being an Emerging Growth Company

We are an emerging growth company as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. We will remain an emerging growth company until the earliest of: (i) the last day of the fiscal year following the fifth anniversary of the consummation of this offering; (ii) the last day of the fiscal year in which we have total annual gross revenue of at least $1.07 billion; (iii) the last day of the fiscal year in which we are deemed to be a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, which would occur if the market value of our common stock held by non-affiliates exceeded $700 million as of the last business day of the second fiscal quarter of such year; or (iv) the date on which we have issued more than $1 billion in non-convertible debt securities during the prior

three-year period. An emerging growth company may take advantage of specified reduced reporting requirements and is relieved of certain other significant requirements that are otherwise generally applicable to public companies. As an emerging growth company:

- we will present in this prospectus only two years of audited annual financial statements, plus any required unaudited financial statements, and related management's discussion and analysis of financial condition and results of operations;
- we will avail ourselves of the exemption from the requirement to obtain an attestation and report from our independent registered public accounting firm on the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act;
- we will provide less extensive disclosure about our executive compensation arrangements; and
- we will not require stockholder non-binding advisory votes on executive compensation or golden parachute arrangements.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period for any other new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early.

THE OFFERING

Issuer	Caribou Biosciences, Inc.
Common stock offered by us	19,000,000 shares
Option to purchase additional shares	We have granted the underwriters an option exercisable for a period of 30 days to purchase up to 2,850,000 additional shares of our common stock.
Common stock to be outstanding immediately after this offering	56,709,191 shares (or 59,559,191 shares if the underwriters exercise their option to purchase additional shares of common stock in full). The underwriters can exercise this option at any time within 30 days after the date of this prospectus.
Use of proceeds	We estimate that the net proceeds to us from the sale of shares of common stock in this offering will be approximately $278.9 million (or approximately $321.3 million if the underwriters exercise their option to purchase additional shares in full), after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, to advance the clinical development of our CB-010 product candidate, including funding the ANTLER phase 1 clinical trial through initial data; to fund IND-enabling activities and the potential initiation of clinical studies for our CB-011 and CB-012 product candidates; to continue research and development of our iPSC-to-NK platform for solid tumor-targeted cell therapies; to continue advancement of our genome-editing technologies, as well as discovery-stage research toward potential additional programs; and the remainder for working capital and other general corporate purposes. See the section titled “Use of Proceeds” for more information.
Risk factors	See the section titled “Risk Factors” and the other information included in this prospectus for a discussion of risks you should carefully consider before investing in our common stock.
Nasdaq Global Select Market trading symbol	“CRBU”

The number of shares of common stock to be outstanding following this offering is based on 37,709,191 shares of common stock outstanding as of July 12, 2021 (after giving effect to the conversion of all of our shares of preferred stock outstanding as of July 12, 2021, into an aggregate of 26,234,654 shares of our common stock immediately prior to the completion of this offering), and excludes:

- 5,080,046 shares of common stock issuable upon the exercise of stock options outstanding as of July 12, 2021, under our 2013 Equity Incentive Plan, or the 2013 Plan, at a weighted average exercise price of $3.33 per share;

- 930,836 shares of common stock available for future issuance under the 2013 Plan as of July 12, 2021;
- 5,200,000 shares of common stock newly reserved for future issuance under our 2021 Equity Incentive Plan, or the 2021 Plan; and
- 511,000 shares of common stock reserved for future issuance under our 2021 Employee Stock Purchase Plan, or the 2021 ESPP.

Unless we specifically state otherwise, all information in this prospectus assumes:

- the 1.818-for-1 forward stock split of our common stock effected on July 15, 2021;
- the automatic conversion of all outstanding shares of our convertible preferred stock into an aggregate of 26,234,654 shares of common stock immediately prior to the closing of this offering;
- no exercise of the outstanding options described above;
- no exercise of the underwriters' option to purchase up to 2,850,000 additional shares of our common stock; and
- the filing and effectiveness of our amended and restated certificate of incorporation and the adoption of our amended and restated bylaws upon the closing of this offering.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables summarize our consolidated financial data for the periods and as of the dates indicated. We have derived the summary consolidated statements of operations and comprehensive loss data for the years ended December 31, 2019 and 2020 and consolidated balance sheet data as of December 31, 2020 from our audited consolidated financial statements included elsewhere in this prospectus. We have derived the summary condensed consolidated statements of operations and comprehensive loss data for the three months ended March 31, 2020 and 2021 and condensed consolidated balance sheet data as of March 31, 2021 from our unaudited interim condensed consolidated financial statements included elsewhere in this prospectus. In the opinion of management, such unaudited interim condensed consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and reflect all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of such financial data. Our historical results are not necessarily indicative of the results that may be expected in the future and our interim results are not necessarily indicative of our expected results for the year ending December 31, 2021 or any other interim period. The summary financial data included in this section is not intended to replace the financial statements and related notes included elsewhere in this prospectus. You should read this data together with our consolidated financial statements and related notes appearing elsewhere in this prospectus and the information in the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Years Ended December 31,		Three Months Ended March 31,	
	2019	2020	2020	2021
	(In thousands, except share and per share amounts)			
Consolidated Statements of Operations and Comprehensive Loss Data:				
Licensing and collaboration revenue	$ 5,788	$ 12,361	$ 1,701	$ 1,586
Operating expenses:				
Research and development	23,635	34,425	8,641	10,165
General and administrative	16,458	14,060	3,489	4,596
Total operating expenses	40,093	48,485	12,130	14,761
Loss from operations	(34,305)	(36,124)	(10,429)	(13,175)
Other income (expense):				
Interest income	1,047	236	142	4
Interest expense	(4)	(20)	(3)	(5)
Change in fair value of equity securities	2,294	(733)	(733)	—
Other income	—	514	21	17
Total other income (expense)	3,337	(3)	(573)	16
Net loss before provision for income taxes	(30,968)	(36,127)	(11,002)	(13,159)
Benefit from income taxes	(7,537)	(1,819)	(1,202)	—
Net loss and comprehensive loss	$ (23,431)	$ (34,308)	$ (9,800)	$ (13,159)
Net loss per share, basic and diluted(1)	$ (2.80)	$ (4.01)	$ (1.16)	$ (1.39)
Weighted-average shares used in computing net loss per share, basic and diluted(1)	8,374,674	8,546,741	8,429,410	9,499,448
Pro forma net loss per share, basic and diluted (unaudited)(2)		$ (1.51)		$ (0.48)
Weighted-average shares outstanding used in computing pro forma net loss per share, basic and diluted (unaudited)(2):		22,666,372		27,657,420

(1) See Note 15, “Net loss per share” to each of our consolidated financial statements included elsewhere in this prospectus for an explanation of the calculations of our basic and diluted net loss per share, and the weighted-average number of shares outstanding used in the computation of the per share amounts.

(2) See the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Unaudited Pro Forma Information” for an explanation of the calculations of our basic and diluted pro forma net loss per share, and the weighted-average number of shares outstanding used in the computation of the per share amounts.

	As of March 31, 2021		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)
	(In thousands, except share and per share amounts)		
Consolidated Balance Sheets Data:			
Cash and cash equivalents	$145,924	$145,924	$ 424,844
Working capital(3)	133,715	133,715	412,635
Total assets	167,965	167,965	446,885
Total liabilities	53,504	53,504	53,504
Convertible preferred stock	150,150	—	—
Accumulated deficit	(44,030)	(44,030)	(44,030)
Total stockholders’ equity (deficit)	(35,689)	114,461	393,381

(1) The pro forma consolidated balance sheet data gives effect to: (i) the filing and effectiveness of our amended and restated certificate of incorporation, which will be in effect immediately prior to the completion of this offering, and (ii) the automatic conversion of all of our outstanding convertible preferred stock into an aggregate of 26,234,654 shares of our common stock immediately prior to the completion of the offering.

(2) The pro forma as adjusted consolidated balance sheet data gives effect to: (i) the pro forma adjustments set forth in footnote (1) above; and (ii) the sale of 19,000,000 shares of our common stock in this offering after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

(3) We define working capital as current assets less current liabilities. See our consolidated financial statements and related notes appearing elsewhere in this prospectus for details regarding our current assets and current liabilities.

RISK FACTORS

Investing in shares of our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all of the other information contained in this prospectus, including our financial statements and related notes, before making an investment decision. The risks described below are not the only ones facing us. Many of the following risks and uncertainties are, and will be, exacerbated by the COVID-19 pandemic and any worsening of the global business and economic environment as a result. The occurrence of any of the following risks, or of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, could materially and adversely affect our business, financial condition, results of operations and prospects, and reputation. In such case, the trading price of shares of our common stock could decline, and you may lose all or part of your investment. This prospectus also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of a number of factors, including the risks described below. See "Special Note Regarding Forward-Looking Statements."

Risks Relating to Our Financial Position and Need for Additional Capital

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

We have incurred significant net operating losses each year since our inception. For the years ended December 31, 2019 and 2020, we incurred net operating losses of $34.3 million and $36.1 million, respectively, and for the three months ended March 31, 2020 and 2021, we incurred net operating losses of $9.8 million and $13.2 million, respectively. As of March 31, 2021, we had an accumulated deficit of $44.0 million. In addition, we have not commercialized any products and have never generated any revenue from product sales. We have devoted almost all of our financial resources to research and development, including our preclinical development activities.

We expect to continue to incur significant expenses and operating losses over the next several years and for the foreseeable future as we seek to advance product candidates through preclinical and clinical development, expand our research and development activities, develop new product candidates, complete preclinical studies and clinical trials, seek regulatory approval and, if we receive approval from the U.S. Food and Drug Administration, or FDA, or foreign regulatory authorities, commercialize our products. Furthermore, the costs of advancing product candidates into each succeeding clinical phase tend to increase substantially over time. The total costs to advance any of our product candidates to marketing approval in even a single jurisdiction is substantial. Our prior losses, combined with expected future losses, will continue to have an adverse effect on our stockholders' deficit and working capital. We anticipate that our expenses will increase substantially if and as we:

- progress our ANTLER phase 1 clinical trial for our CB-010 product candidate;
- continue our current research programs and our preclinical and clinical development of our other current product candidates, including CB-011, CB-012, and CB-020, and any other product candidates we identify and choose to develop;
- hire additional clinical, quality control, and scientific personnel;
- seek to identify additional research programs and additional product candidates;
- further develop our genome-editing technologies;
- acquire or in-license technologies;
- expand, maintain, enforce, and defend our intellectual property estate;

- seek regulatory and marketing approvals for any of our product candidates that successfully complete clinical trials, if any;
- establish and expand manufacturing capabilities and supply chain capacity for our product candidates;
- add operational, legal, financial, and management information systems and personnel;
- experience any delays, challenges or other issues associated with any of the above, including the failure of clinical trials meeting endpoints, the generation of unanticipated preclinical results or clinical trial data subject to differing interpretations, or the occurrence of potential safety issues or other development or regulatory challenges;
- make royalty, milestone, or other payments under current, and any future, in-license or assignment agreements;
- establish a sales, marketing, and distribution infrastructure to commercialize any product candidates for which we obtain marketing approval; and
- operate as a public company.

Because of these risks, we are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

Even if this offering is successful, we will need substantial additional financing to develop our product candidates and implement our operating plans. If we fail to obtain additional financing, we may be delayed or unable to complete the development and commercialization of our product candidates.

Even after the consummation of this offering, we will continue to need additional capital beyond the proceeds of this offering, which we may raise through equity offerings, debt financings, collaborations and strategic alliances, licensing arrangements, or other sources. Additional sources of financing might not be available on favorable terms, if at all. If we do not succeed in raising additional funds on acceptable terms, we might be unable to complete the development or obtain marketing approval of any of our product candidates, and we could be forced to delay or discontinue product development and commercialization.

We expect to spend a substantial amount of capital in the research, development, and manufacture of our product candidates. We expect our expenses to increase in connection with our ongoing activities, particularly as we initiate clinical trials for, and seek marketing approval of, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing, and distribution to the extent that we do not obtain commercialization partners who will bear the costs for such activities. We may also need to raise additional funds sooner if we choose to pursue additional indications or markets for our product candidates or otherwise expand more rapidly than we presently anticipate. Furthermore, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we will be forced to delay, reduce, or eliminate certain of our research and development programs or future commercialization efforts. Because our allogeneic cell therapy product candidates are based on new technologies, they require extensive research and development and have substantial manufacturing costs. In addition, clinical costs to treat cancer patients with our product candidates, including treatment of any potential side effects that may arise, will be significant.

As of December 31, 2020 and March 31, 2021, we had cash and cash equivalents of $16.0 million and $145.9 million, respectively. In March 2021, we received a $30.0 million upfront cash payment under our Collaboration and License Agreement with AbbVie Manufacturing Management Unlimited Company, or AbbVie, and we received net proceeds of $108.8 million from our Series C convertible preferred stock financing. We expect our cash and cash equivalents to be sufficient to fund our current operating plan through at least the next 12 months from the date the interim condensed consolidated financial statements included elsewhere in this prospectus are issued. Our expectation is based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect.

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

- costs, progress, and results of our product candidate preclinical studies and clinical trials;
- potential delays in our preclinical studies and clinical trials, whether current or planned, due to unforeseen events as well as other factors such as the COVID-19 pandemic;
- costs and prioritization of our research and development programs as well as costs to acquire or in-license technologies or other product candidates;
- expansion of our workforce or our facilities;
- costs of establishing and maintaining a supply chain for the development and manufacture of our product candidates;
- timing and outcome of regulatory review of our product candidates;
- success of our collaboration with AbbVie and our receipt of reimbursements due thereunder;
- our ability to establish and maintain additional collaborations on favorable terms;
- costs of fulfilling our contractual obligations to reimburse certain parties for costs incurred in connection with the prosecution and maintenance of licensed patent rights, including reimbursements owed to The Regents of the University of California, or UC;
- achievement of milestones that trigger payments under any of our current license and assignment agreements as well as under any additional agreements we enter into in the future;
- costs of preparing, filing, prosecuting, and maintaining our patent portfolio, including costs associated with administrative proceedings of patent offices;
- litigation costs in the event we seek to enforce our patents against third parties or if we are sued for infringement by third parties;
- effects of competing technologies, success or failure of products similar to our product candidates, and market developments;
- costs of establishing or contracting for sales and marketing capabilities if we obtain regulatory approvals to market our product candidates; and
- costs of operating as a public company.

Changing circumstances may cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than expected because of circumstances beyond our control. We may also need to raise additional capital sooner if we choose to expand programs, personnel, and facilities more rapidly than planned. In any event, we will require additional capital for the further research, development, and commercialization of our product candidates, including potentially establishing our own internal manufacturing capabilities. Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to research, develop, and commercialize our product candidates.

We cannot be certain that additional funding will be available when needed and on acceptable terms, or at all. If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay, or discontinue one or more of our product candidate preclinical studies, clinical trials, or development and commercialization, or we may be unable to expand our operations or otherwise capitalize on our business opportunities, as desired. Any of the above could significantly harm our business, financial condition, results of operations, and prospects and cause the price of our common stock to decline.

Raising additional capital may cause dilution to our stockholders, including purchasers of common stock in this offering; restrict our operations; or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, that we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, and strategic collaboration and licensing arrangements. The terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our common stock to decline. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, licensing or assigning our intellectual property rights, declaring dividends, and possibly other restrictions.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, our stockholders' interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders.

If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or future commercialization efforts. Alternatively, we could be required to seek collaborators for our product candidates at an earlier stage than would otherwise be desirable or on terms that are less favorable than might otherwise be available. We might need to relinquish or license on unfavorable terms our rights to our product candidates in markets where we otherwise would seek to pursue development and commercialization ourselves, or to license our intellectual property to others who could develop products that will compete with our products. Any of these actions could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We have a limited operating history, which may make it difficult to evaluate our technologies and product candidate development capabilities or to predict our future performance.

We are a clinical-stage biotechnology company formed in 2011, with no products approved for commercial sale, and we have not generated any revenues from product sales. Our operations to date have been limited to financing and staffing our company, developing our technologies, and identifying and developing our product candidates. Our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by companies in their early stages of operations. We have not yet demonstrated an ability to obtain marketing approval, manufacture at commercial scale, or conduct sales and marketing activities for our product candidates, which are all necessary for successful product commercialization. Consequently, predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or

a history of successfully developing and commercializing cell therapy products. Our ability to generate product revenue or profits, which we do not expect to occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates, which may never occur. Unless we receive approval from the FDA or other regulatory authorities for our product candidates, we will not have product revenues. We may never be able to develop or commercialize a marketable cell therapy product.

We are early in our development efforts. To date, we have only dosed the first patient in our first clinical trial, which is the ANTLER phase 1 clinical trial for our CB-010 product candidate. All of our programs will require clinical development, regulatory approval, manufacturing at commercial scale, distribution channels, a commercial organization, significant marketing efforts, and substantial investment before we generate any revenue from product sales. In addition, our product candidates must be approved for marketing by the FDA before we may commercialize our products in the United States and, if we wish to commercialize our products outside the United States, by foreign regulatory agencies. Furthermore, following closing of this offering, we expect to incur additional costs associated with operating as a public company, including significant legal, accounting, insurance, investor relations, and other expenses that we did not incur as a private company.

Additionally, the rapidly evolving nature of the genome-editing and cell therapy fields may make it difficult to evaluate our technologies and product candidates as well as to predict our future performance. Our short history as an operating company makes any assessment of our future success or viability subject to significant uncertainty. We will encounter risks and difficulties, known and unknown, that are frequently experienced by early-stage companies in rapidly evolving fields. As we advance our product candidates, we must transition from a company with a research focus to a company capable of supporting clinical development and, if successful, commercial activities. We may not be successful in such transitions. If we do not address these risks successfully, our business will suffer. Similarly, we expect that our financial condition and operating results may fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. As a result, you should not rely upon the results of any quarterly or annual period as an indicator of future operating performance.

Risks Relating to Our Business, Government Regulation, Technology, and Industry

We are early in our development efforts and it will be many years before we commercialize a product candidate, if ever. If we are unable to advance our product candidates through clinical trials, obtain regulatory approval, and ultimately commercialize our product candidates, or experience significant delays in doing so, our business will be materially harmed.

We are early in the development of our cell therapy product candidates and have focused our research and development efforts to date on various CRISPR genome-editing technologies, including our chRDNA genome-editing technology, as well as identifying our initial chimeric antigen receptor T cell, or CAR-T cell, product candidates. Our future success depends heavily on the successful development of our product candidates. Our ability to generate product revenue, which we do not expect will occur for many years, if ever, will be a result of the successful development and eventual commercialization of our product candidates, which may never occur. Our product candidates may have adverse side effects or fail to demonstrate safety and efficacy. Additionally, our product candidates may have other characteristics that may make them impractical or prohibitively expensive for large-scale manufacturing. Furthermore, our product candidates may not receive regulatory approval or, if they do, they may not be accepted by the medical community or patients or may not be competitive with other products that become available. We currently generate no revenue from sales of any product and we may never be able to successfully develop or commercialize a marketable product.

We must submit investigational new drug, or IND, applications to the FDA to initiate clinical trials in the United States. In late August 2020, the FDA cleared our IND for our first product candidate, CB-010. The filing of future INDs for our other product candidates is subject to additional preclinical research, research-scale and clinical-scale manufacturing, exploration of possible other genome-editing systems, evaluation of potential targets, or other factors yet to be identified. In the case of our CB-012 product, we will need to identify and select

our Cas12a chRDNA guides with acceptable accuracy and efficiency. In addition, commencing any new clinical trial is subject to review by the FDA based on the acceptability and sufficiency of our chemistry, manufacturing, and controls, or CMC, and preclinical information provided to support our IND. In the event that the FDA or foreign regulatory authorities require us to complete additional preclinical studies or we are required to satisfy other requests for additional data or information, our clinical trials may be delayed. Even after we receive and incorporate guidance from the FDA or foreign regulatory authorities, these regulatory authorities could disagree that we have satisfied all requirements to initiate our clinical trial or they may change their position on the acceptability of our trial design or the clinical endpoints selected. They could impose a clinical hold, which may require us to complete additional preclinical studies or clinical trials. The success of our product candidates will depend on several factors, including the following:

- sufficiency of our financial and other resources;
- acceptance of our chRDNA genome-editing technology;
- ability to develop and deploy armoring technologies so that our product candidates have a competitive edge;
- completion of preclinical studies;
- clearance of INDs to initiate clinical trials;
- successful enrollment in, and completion of, our clinical studies;
- data from our clinical trials that support an acceptable risk-benefit profile of our product candidates for our intended patient populations and indications and demonstrate safety and efficacy;
- establishment of agreements with third-party contract manufacturing organizations, or CMOs, for clinical and commercial supplies and scaling up of manufacturing processes and capabilities to support our clinical trials;
- successful development of our internal process development and transfer to larger-scale facilities;
- receipt of regulatory and marketing approvals from applicable regulatory authorities;
- receiving regulatory exclusivity for our product candidates;
- establishment, maintenance, enforcement, and defense of patent and trade secret protection and other intellectual property rights;
- not infringing, misappropriating, or otherwise violating third-party intellectual property rights;
- entry into collaborations to further the development of our product candidates or for the development of new product candidates;
- establishing sales, marketing, and distribution capabilities for commercial launch of our product candidates if and when approved, whether by us or in collaboration with third parties;
- maintenance of a continued acceptable safety profile of products post-approval;
- acceptance of product candidates, if and when approved, by patients, the medical community, and third-party payors;

- effective competition with other therapies and treatment options;
- establishment and maintenance of healthcare coverage and adequate reimbursement; and
- expanding indications and patient populations for our products post-approval.

Our product candidates are cell therapies generated by novel chRDNA genome-editing technologies, which makes it difficult to predict the time and cost of developing our product candidates and obtaining regulatory approval. To date, no other products that use these genome-editing technologies have advanced into clinical trials or received marketing approval in the United States.

We are concentrating our initial research, development, and manufacturing efforts on our allogeneic CAR-T cell therapies that are intended to treat patients with certain cancers. Before obtaining regulatory approval for the commercial sale of any of our product candidates, we must demonstrate through lengthy, complex, and expensive preclinical studies and clinical trials that our product candidates are both safe and effective for their intended use. The clinical trial requirements of the FDA and other regulatory authorities, and the criteria these regulators use to determine the safety and efficacy of a product candidate, vary substantially according to the type, complexity, novelty, intended use, and target population of our product candidates. The outcome of preclinical studies and clinical trials is inherently uncertain. Failure can occur at any time during the preclinical study and clinical trial processes and because we have never successfully launched a product and our first product candidate is in an early stage of clinical development, there is a high risk of failure. We may never succeed in developing marketable products.

Approval processes by the FDA or other regulatory authorities for existing autologous anti-CD19 and anti-B cell maturation antigen, or BCMA, CAR-T cell therapies may not be indicative of what these regulatory authorities will require for approval of our allogeneic anti-CD19 CAR-T cell therapy or our other product candidates. Also, although we expect reduced variability in our allogeneic products candidates compared to autologous products, we do not have any clinical data supporting benefits of lower variability, and the use of healthy donor material may create separate variability challenges for us. Moreover, our product candidates may not perform successfully in clinical trials or may be associated with serious adverse events that distinguish them from the autologous anti-CD19 and anti-BCMA CAR-T therapies that have previously been approved. For instance, allogeneic product candidates may result in graft versus host disease, or GvHD, not experienced with autologous products. GvHD results when allogeneic T cells see the patient's normal tissue as foreign and attack and damage those cells. Even if we collect promising initial clinical data for our product candidates, longer-term data may reveal adverse events or responses that are not durable. Unexpected negative clinical outcomes would significantly impact our business.

In addition, approved autologous CAR-T therapies and those under development have shown frequent rates of cytokine release syndrome, neurotoxicity, serious infections, prolonged cytopenia, and hypogammaglobulinemia, and other serious adverse events that have resulted in patient deaths. There may be similar adverse events for our allogeneic CAR-T and CAR-NK cell therapy product candidates, including patient deaths. Moreover, patients eligible for allogeneic CAR-T cell therapies but ineligible for autologous CAR-T cell therapies due to aggressive cancer or an inability to wait for autologous CAR-T cell therapies may be at greater risk for complications and death from therapy. 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. Our product candidates may not be successful in limiting the risk of GvHD, exhaustion of the CAR-T cells, or premature rejection by the patient's immune system. If significant GvHD or other serious adverse events are observed with the administration of our product candidates, or if any of our product candidates are viewed as less safe or effective than autologous therapies or other allogeneic therapies, our ability to develop other allogeneic therapies may be adversely affected.

We use our chRDNA genome-editing platform to generate our product candidates, and we believe chRDNAs significantly improve the specificity of CRISPR genome editing (*e.g.*, reduce the number of off-target

events). CRISPR genome editing generally is relatively new; to date, no genome-editing technologies have been approved in the United States although clinical trials of product candidates based on CRISPR and other genome-editing technologies are underway. As a result, the regulatory approval process for cell therapy product candidates such as ours is uncertain and may be more expensive and take longer than the approval process for product candidates based on better known or more extensively studied technologies. As such, it is difficult to accurately predict the developmental challenges we may face as we progress our product candidates through preclinical studies and clinical trials. There may be long-term adverse effects from treatment with our product candidates resulting from the use of our chRDNA genome-editing technology that we cannot predict at this time. Also, animal models may not exist for some of the diseases we choose to pursue in our programs, which may complicate and increase the cost of preclinical research. As a result of these factors, it is difficult for us to predict the time and cost of our product candidate development, and we cannot predict whether the application of our chRDNA genome-editing technology, or other genome-editing technologies we may use in the future, will result in the identification, development, preclinical studies, and clinical trials to support regulatory approval of any of our cell therapy product candidates. There can be no assurance that any development problems we experience in the future related to our chRDNA genome-editing technology or any of our research programs will not cause significant delays or unanticipated costs, or that such development problems can be solved. We may not achieve the desired safety and efficacy of our product candidates. Also, we may not sufficiently improve genome-editing specificity and our genome editing may have off-target events. Moreover, we may not be able to achieve a high degree of on-target gene knockout and insertion efficiency in developing our product candidates. While we expect to have initial clinical data from the CB-010 clinical trial in 2022, any of these factors may prevent us from completing our clinical trials, delay or cause us to fail to meet our clinical trial endpoints, or lead us to fail to commercialize any of our cell therapy product candidates.

We may also experience delays in developing robust, reproducible, and scalable manufacturing processes and transferring those processes to CMOs, which may prevent us from completing our clinical studies or commercializing our products on a timely or profitable basis, if at all. Currently, we have only manufactured our CB-010 product candidate for clinical trials. In addition, since we are in the early stages of clinical development, we do not know the doses to be used in later phase 2 or pivotal trials needed to evaluate the efficacy of our product candidates, which will impact the manufacturing requirements for our product candidates. Finding a suitable dose for our cell therapy product candidates may delay our anticipated clinical development timelines and prolong our clinical trials. Accordingly, our expectations with regard to our costs of manufacturing may vary significantly as we develop our product candidates and understand these critical factors. Such factors may delay or keep us from bringing a product candidate to market and could decrease our ability to generate sufficient product revenue, which could harm our business, financial condition, results of operations, and prospects.

Manufacturing of our product candidates is complex and we could experience manufacturing problems during our clinical trials, which could delay or limit our market launch or commercial distribution.

The manufacturing processes used to produce our cell therapy product candidates are and will be complex, as our product candidates are novel products and only our CB-010 product candidate has been manufactured according to current good manufacturing processes, or cGMPs, to date. Several factors could cause production interruptions including facility contaminations; shortages or quality problems; contamination of healthy donor cells, chRDNA guides, Cas proteins, viruses, or induced pluripotent stem cell, or iPSC, master cell banks or working cell banks; natural disasters, including the COVID-19 pandemic; labor shortages and strikes; lack of experienced scientific, quality control, and manufacturing personnel; human error; or other disruptions in the operations of our suppliers and CMOs. We conduct process development activities at our facility and we may experience personnel and supply shortages. Problems with our manufacturing process, even minor deviations from the normal process, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims, or insufficient inventory. We may encounter problems achieving adequate quantities and quality of clinical grade materials that meet FDA or other applicable standards or specifications with consistent and acceptable production yields and costs.

As our product candidates proceed through preclinical studies to clinical trials to regulatory review, and potential marketing approval and commercialization, it is common that various aspects of our manufacturing methods will be altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives. If we make any of these changes, they could cause our product candidates to perform differently and affect the results of clinical trials conducted with the altered materials. Such changes may also require additional testing as well as notification to or approval from the FDA or other regulatory authorities, which could delay completion of our clinical trials, require bridging clinical trials, require repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates, if any, and ultimately jeopardize commercialization.

If we receive marketing approval for a product candidate, the FDA and other regulatory authorities may require us to submit samples of any lot of any approved product together with the protocols showing the results of applicable tests at any time. Under some circumstances, the FDA or other regulatory authorities may require that we not distribute a lot until the relevant agency authorizes its release. Slight deviations in the manufacturing process, including those affecting quality attributes and stability, may result in unacceptable changes in the product that could result in lot failures or product recalls. Problems in our manufacturing processes could restrict our ability to meet market demand for our products. All of these factors could be costly to us and otherwise harm our business, financial condition, results of operations, and prospects.

Our business is highly dependent on the success of our lead product candidates, including CB-010 and CB-011, which will require significant additional preclinical and clinical testing before we can seek regulatory approval and potentially commercially launch our product candidates. If we are unable to advance our preclinical studies and clinical trials, obtain approval for and successfully commercialize our lead product candidates for the treatment of patients in approved indications, or if we are significantly delayed in doing so, our business would be significantly harmed.

Our business and future success depends on our ability to advance our product candidates through preclinical studies and clinical trials, obtain regulatory approval for, and successfully commercialize, our product candidates. Because CB-010 is our first allogeneic cell therapy product to be evaluated in the clinic, the failure of our lead product candidate, or the failure of other companies' allogeneic anti-CD19 CAR-T cell therapies, including for reasons due to safety, efficacy, or durability, may impede our ability to develop not only CB-010 but our other CAR-T and CAR-NK product candidates as well, and may significantly influence physicians' and regulatory authorities' opinions with regard to the viability of our entire pipeline of allogeneic cell therapies. In order to submit INDs for our other product candidates, we will need to complete many objectives, such as our preclinical research of product candidates still in discovery and advancement of cGMP conditions for our product candidates. If we are unable to achieve any of these objectives, we may not be able to submit other INDs in a timely manner or at all, which would significantly harm our business. Specifically, in terms of our lead product candidates:

CB-010

CB-010 is our allogeneic anti-CD19 CAR-T cell therapy for the treatment of relapsed or refractory B cell non-Hodgkin lymphoma, or B-NHL. We use our Cas9 chRDNA genome-editing technology to eliminate the T cell receptor from healthy donor T cells to reduce the risk of GvHD and to remove the PD-1 checkpoint from the CAR-T cell surface to reduce exhaustion of the CAR-T cells. We have manufactured CB-010 under cGMP conditions and are enrolling patients for our ANTLER phase 1 clinical trial. We do not know if the preclinical animal results we observed will be borne out in human patients or if CB-010 will ultimately prove to be safe and effective.

CB-011

CB-011 is our allogeneic anti-BCMA CAR-T cell therapy for the treatment of relapsed or refractory multiple myeloma, or MM. We are currently in preclinical animal studies with CB-011, using CB-011 cell

therapy materials which we have produced under current Good Laboratory Practices, or cGLP. We use our Cas12a chRDNA genome-editing technology to eliminate the T cell receptor from healthy donor cells to reduce the risk of GvHD. Additionally, we use our Ca12a chRDNA technology to remove endogenous HLA class I presentation from the CAR-T cells and insert an HLA-E-B2M fusion protein into the *B2M* gene, which we believe immune cloaks the CAR-T cells and blunts T- and NK cell-mediated rejection of the allogeneic CAR-T cells by the patient's immune system, potentially resulting in greater persistence, although we have no clinical evidence for this hypothesis. We anticipate filing our IND for our CB-011 product candidate in 2022; however, there can be no assurances that we will be able to produce CB-011 under cGMP conditions or that we will not experience delays in filing our IND.

CB-012

CB-012 is our allogeneic anti-CD371 CAR-T cell therapy for the treatment of acute myeloid leukemia. We are currently considering various armoring strategies, which will then drive our selection of Cas12a chRDNA guides. We do not anticipate filing our IND for our CB-012 product candidate until 2023; however, there can be no assurances that we will be able to produce CB-012 under cGLP or cGMP conditions or that we will not experience delays in filing our IND.

CB-020

We are conducting preclinical discovery research on natural killer, or NK, cells derived from iPSCs, and whether we can edit such iNK cells for solid tumor-targeted cell therapy development. We have not yet chosen which genome-editing technology we will use to edit the iNK cells nor do we know whether such editing will be successful. To date, we have focused on Cas12a chRDNA editing of iPSCs and on differentiating iPSCs into iNKs. We anticipate selecting a cell-surface target for our CB-020 product candidate in 2022.

Thus, although our product candidates are in various stages of research and development, only our CB-010 product candidate is in a phase 1 clinical trial, and we have substantial hurdles to overcome before any of our product candidates are approved, commercialized, and generate revenues, if at all.

We may not be successful in our efforts to identify and successfully research and develop additional product candidates and may expend our limited resources to pursue particular product candidates or indications while failing to capitalize on other product candidates or indications that may be more profitable or for which there is a greater likelihood of commercial success.

Part of our business strategy involves identifying and developing new cell therapy product candidates. The process by which we identify product candidates may fail to yield successful product candidates for a number of reasons, including:

- we may not be able to assemble sufficient resources to identify or acquire additional product candidates;
- competitors may develop alternative therapies that render new product candidates obsolete or less attractive;
- product candidates we develop or acquire may be covered by third-party intellectual property rights;
- new product candidates may, on further study, be shown to have adverse side effects, toxicities, or other characteristics that indicate that they are unlikely to receive marketing approval or achieve market acceptance;
- new product candidates may not be safe or effective;

- the market for a new product candidate may change so that the continued development of that product candidate is no longer reasonable; and

- we may not be able to produce new product candidates in commercial quantities at an acceptable cost, or at all.

We have limited financial and managerial resources. We are focused initially on allogeneic CAR-T and CAR-NK cell therapies and, as a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to timely capitalize on viable commercial products or profitable market opportunities. Our spending on current and future product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing, or other royalty arrangements when it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate.

If we experience delays or difficulties enrolling patients in the clinical trials for our product candidates, including our ANTLER phase 1 clinical trial, our ability to advance CB-010 and our other product candidates through clinical development and the regulatory process could be delayed or prevented.

The timely completion of clinical trials depends, among other things, on our ability to enroll a sufficient number of patients who remain in the trial until its conclusion. We may encounter delays in enrolling or be unable to enroll a sufficient number of patients to complete any of our clinical trials and, even if patients are enrolled, they may withdraw from our clinical trials before completion. We have dosed the first patient in our ANTLER phase 1 clinical trial for our CB-010 product candidate. For our ANTLER phase 1 clinical trial, we have entered into a contract with a clinical research organization, or CRO, as well as clinical trial agreements with the sites participating in our trial. Patient selection and enrollment may be challenging. Our clinical protocol excludes many non-Hodgkin lymphoma patients from the ANTLER phase 1 clinical trial, including patients previously treated with anti-CD19-targeted therapy or allogeneic stem cell transplantation, patients with active or chronic GvHD requiring therapy, or patients unwilling to follow extended safety monitoring.

Our ANTLER phase 1 clinical trial, as well as any future clinical trials for our other product candidates, will compete for enrollment of patients with other clinical trials for product candidates that are in the same cell therapeutic areas with the same or similar study populations as our product candidates. Our clinical trials will also compete for enrollment of patients with other clinical trials for product candidates based on non-cellular modalities, such as small molecules and antibodies, that are intended for the same or similar study populations as our product candidates. This competition will reduce the number and types of patients available to us because some patients who might opt to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Additionally, since the number of qualified and experienced clinical investigators for therapeutic areas is limited, some of our clinical trial sites may be also conducting clinical trials for some of our competitors, which may reduce the number of patients who are available for our clinical trials at 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, hematopoietic stem cell transplantation, or autologous CAR-T cell therapies, rather than refer patients to our clinical trials. Because our cell therapy product candidates are edited with chRDNA guides, our products may be perceived to have additional or greater safety risks. Patients eligible for allogeneic CAR-T cell therapies but ineligible for autologous CAR-T cell therapies may be difficult to treat due to advanced and aggressive cancers and may fail to experience improved outcomes and be at greater risk for complications and death from our product candidates. If patients are unwilling to participate in our cell therapy trials, the timeline for recruiting patients, conducting clinical trials, and obtaining regulatory approval of any of our product candidates may be delayed.

In addition, the enrollment of patients depends on many factors, including:

- severity or stage of the type of cancer under investigation;
- size of the patient population and process for identifying patients;
- design of the clinical trial protocol;
- availability of eligible prospective patients who are otherwise eligible patients for competitive clinical trials;
- availability and efficacy of approved alternative treatments for the disease under investigation;
- ability to obtain and maintain patient consent;
- risk that enrolled patients will drop out before completion of the trial;
- eligibility and exclusion criteria for the trial in question;
- perceived risks and benefits of our product candidates;
- perceived risks and benefits of genome-editing and cell therapies;
- perceived risks and benefits of participating in a clinical trial;
- efforts by clinical sites and investigators to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians;
- ability to monitor patients adequately during and after treatment;
- proximity and availability of clinical trial sites for prospective patients; and
- business interruptions resulting from the COVID-19 pandemic.

Enrollment delays in our clinical trials may result in increased development costs for any product candidates we may develop, which may cause our stock price to decline and limit our ability to obtain additional financing. If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit, or terminate our ANTLER phase 1 clinical trial or future clinical trials, and postpone or forgo seeking marketing approval, any of which would have an adverse effect on our business, financial condition, results of operations, and prospects.

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. Issues may arise that could suspend or terminate our clinical trials. A failure of one or more clinical studies may 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:

- the FDA or comparable foreign regulatory authorities disagreeing as to the design or implementation of our clinical trials;

- delays or failure to obtain regulatory clearance to initiate our clinical trials, as well as delays or failures to obtain any necessary approvals by the clinical sites;
- delays, suspension, or termination of our clinical trials by the clinical sites;
- modification of clinical trial protocols;
- delays in 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 clinical trial sites, as well as possible future breaches of such agreements;
- failure to manufacture sufficient quantities of our product candidates for use in our clinical trials;
- failure by third-party suppliers, CMOs, CROs, and clinical trial sites to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- imposition of a temporary or permanent clinical hold by us, the investigational review boards, or IRBs, for the institutions at which such trials are being conducted, or by the FDA or other regulatory authorities for safety or other reasons, such as a result of a new safety finding in a clinical trial on a similar product by one of our competitors, that presents unreasonable risk to clinical trial participants;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- changes in the standard of care on which we developed our clinical development plan, which may require new or additional trials;
- the cost of clinical trials of our product candidates being greater than we anticipated;
- insufficient funding to continue clinical trials with our product candidates;
- the emergence of unforeseen safety issues or undesirable side effects;
- clinical trials of our product candidates producing negative or inconclusive results, which may result in our deciding, or regulators requiring us, to conduct additional clinical trials or abandon development of our product candidates;
- inability to establish clinical trial endpoints that applicable regulatory authorities consider clinically meaningful, or, if we seek accelerated approval, that applicable regulatory authorities consider likely to predict clinical benefit;
- regulators withdrawing their approval of a product or imposing restrictions on its distribution; and
- business interruptions resulting from the COVID-19 pandemic.

If we are required to extend the duration of any clinical trials or to conduct additional preclinical studies or clinical trials or other testing of our product candidates beyond those that we currently contemplate; if we are unable to successfully complete preclinical studies or clinical trials of our product candidates or other testing; if the results of these trials, studies, or tests are negative or produce inconclusive results; if there are safety

concerns; or if we determine that the observed safety or efficacy profile would not be competitive in the marketplace, we may:

- abandon the development of one or more product candidates;
- incur unplanned costs;
- be delayed in obtaining marketing approval for our product candidates or not obtain marketing approval at all;
- obtain marketing approval in some jurisdictions and not in others;
- obtain marketing approval for indications or patient populations that are not as broad as intended or designed;
- obtain marketing approval with labeling that includes significant use restrictions or safety warnings, including black box warnings;
- be subject to additional post-marketing requirements; or
- have regulatory agencies remove the product from the market or we voluntarily withdraw the product from the market after obtaining marketing approval.

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

Our product candidates are in various stages of preclinical and clinical development. If we encounter safety or efficacy problems in our ongoing or future studies, our developmental plans and business could be significantly harmed. Product candidates in later stages of clinical trials may fail to show the desired safety profiles and efficacy results despite having progressed through initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Based upon negative or inconclusive results, we may decide, or regulatory agencies may require us, to conduct additional clinical trials or preclinical studies. In addition, data obtained from clinical trials are susceptible to varying interpretations, and regulatory agencies may not interpret our data as favorably as we do, which may delay, limit, or prevent regulatory approval.

In addition, the design of a clinical trial can determine whether its results will support approval of our product candidates, and flaws in the design of a clinical trial may not be apparent until the clinical trial is well advanced. We have limited experience designing clinical trials and may be unable to design and execute a clinical trial that will support regulatory approval.

From time to time, we may publish initial, interim, or preliminary data from our clinical trials. Initial, interim, or preliminary data from clinical trials 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. We also make assumptions, estimations, calculations, and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully evaluate all data at the time of publishing initial, interim, or preliminary data. These data also remain subject to audit and verification procedures that may result in the final data being materially different from the data we previously published. As a result, initial, interim, and preliminary data should be viewed with caution until the final data are available. Moreover, initial, interim, and preliminary data are subject to the risk that one or more of the clinical outcomes may materially change as more patient data

become available when patients mature on study, patient enrollment continues, or, for final data, as other ongoing or future clinical trials with a product candidate further develop. Past results of clinical trials may not be predictive of future results. Unfavorable differences between initial, interim, or preliminary data and final data could significantly harm our business prospects and may cause the trading price of our common stock to fluctuate significantly.

Because of these risks, our product candidates may fail or encounter difficulties in clinical trials. If we are unable to advance our product candidates through clinical trials to seek marketing approval, our business, financial condition, results of operations, and prospects may be materially harmed.

If our product candidates cause serious adverse events or undesirable side effects, including injury and death, or have other properties that could delay or prevent regulatory approval, their commercial potential may be limited or extinguished.

Product candidates we develop may be associated with undesirable or unacceptable side effects, unexpected characteristics, or other serious adverse events, including death. Immunotherapy, and its method of action of harnessing the immune system, is powerful and could lead to serious side effects that we only discover in clinical trials. In addition to potential serious adverse events from the immune system or side effects caused by our CB-010 product, or any product candidate we may develop and advance into one more clinical trials, the product candidate administration process and related procedures may also cause undesirable side effects. Patients who enroll in our ANTLER phase 1 clinical trial, and potentially future trials, will undergo a lymphodepletion regimen, including administration of fludarabine and cyclophosphamide, which can lead to serious adverse events. Because these regimens will cause a transient and sometimes prolonged immune suppression, patients will have an increased risk of certain infections, which could ultimately lead to death. We expect to have to educate clinical site personnel administering our cell therapy product candidates to understand the side effect profiles for our product candidates. Inadequate recognition or management of the potential side effects of our product candidates could result in patient injury or death. If any undesirable or unacceptable side effects, unexpected characteristics, or other serious adverse events occur, our clinical trials could be suspended or terminated, and our business and reputation could suffer substantial harm.

There can be no assurance that we will resolve any adverse event issues related to any of our products to the satisfaction of the FDA or any regulatory agency in a timely manner or at all. If in the future we are unable to successfully demonstrate that such adverse events were caused by factors other than our product candidates, the FDA or other regulatory authorities could order us to cease further clinical trials of, or deny approval of, our product candidates. Even if we are able to demonstrate that such serious adverse events are not product candidate-related, such occurrences could affect patient recruitment or the ability of enrolled patients to complete our clinical trials. Moreover, if we elect, or are required, to delay, suspend, or terminate any clinical trial of any of our product candidates, the commercial prospects of such product candidates may be harmed and our ability to generate product revenues from these product candidates may be delayed or eliminated. Any of these occurrences may harm our business, financial condition, results of operations, and prospects.

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

If and when our ANTLER phase 1 clinical trial for our CB-010 product candidate is completed and, assuming positive data, we will propose to advance to a pivotal clinical trial. Although the FDA has found substantial evidence to support approval outside of the traditional phase 1, phase 2, and phase 3 framework for the approved anti-CD19 and anti-BCMA CAR-T cell therapies, the general approach for FDA approval of a new biologic is for the sponsor to provide dispositive data from at least two adequate and well-controlled clinical trials of the relevant biologic in the applicable patient population. Such clinical trials typically involve hundreds of patients, have significant costs, and take years to complete. We do not have agreement or guidance from the FDA that our regulatory development plans will be sufficient for submission of a biologics license application, or

BLA. For example, the FDA may require that we conduct a comparative trial against an approved therapy, such as an approved autologous CAR-T cell therapy, which would significantly delay our development timelines and require substantially more resources. In addition, the FDA may limit our evaluation to patients who have failed or who are ineligible for autologous therapy, patients who may be difficult to treat, or patients with advanced and aggressive cancer, and our product candidates may fail to improve outcomes for such patients.

In addition, the standard of care may change with the approval of new products in the same indications to which our cell therapy product candidates are directed. This may result in the FDA or other regulatory authorities requesting additional studies to show that our product candidate is comparable or superior to the new products.

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

- the FDA or other 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 other regulatory authorities that our product candidates are safe and effective for their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or other regulatory authorities for approval, including due to heterogeneity of patient populations;
- we may be unable to demonstrate that the clinical and other benefits of our product candidates outweigh the safety risks;
- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA or other regulatory authorities to support the submission of a BLA or a similar filing in foreign jurisdictions;
- the FDA or other authorities will review our manufacturing processes and inspect our CMOs' facilities and may not approve our manufacturing processes or CMOs' facilities; and
- the approval policies or regulations of the FDA or other regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Even if we comply with all FDA requests, we may still fail to obtain regulatory approval. We cannot be sure that we will ever obtain regulatory clearance for our product candidates. Failure to obtain FDA approval of our product candidates will severely undermine our business by leaving us without a commercially marketable product in the United States, and therefore without any source of revenues from product sales in the United States, until another product candidate can be developed or obtained and ultimately approved.

Even if we complete the necessary preclinical studies and clinical trials, the regulatory approval process is expensive, time-consuming, and uncertain, and we may be unable to obtain the regulatory approvals necessary for the commercialization of our product candidates; furthermore, if there are delays in obtaining regulatory approvals, we may not be able to commercialize our products, may lose competitive lead time, and our ability to generate revenues will be materially impaired.

The process of obtaining marketing approvals, both in the United States and in other jurisdictions, is expensive, may take many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. It is impossible to predict if or when any of our product candidates will prove to be safe and effective in humans or if we will receive

regulatory approval for such product candidates, and the risk of failure through the development process is high. Any product candidates we may develop and the activities associated with their development and commercialization, including their manufacture, preclinical and clinical development, safety, efficacy, recordkeeping, labeling, storage, advertising, promotion, sale, and distribution, are subject to comprehensive regulation by the FDA and other regulatory authorities.

Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate in a given jurisdiction. We have not received approval or authorization to market any product candidates from regulatory authorities in any jurisdiction and it is possible that none of our product candidates or any product candidates we may seek to develop in the future will ever obtain marketing approval or commercialization. We have not previously submitted a BLA to the FDA or made a similar submission to any foreign regulatory authority. A BLA must include extensive preclinical and clinical data and supporting information to establish our product candidate's safety and efficacy for each desired indication. The BLA must also include significant information regarding the CMC for our product. Any product candidates we develop may not be effective; may be only moderately effective; or may prove to have undesirable or unintended side effects, toxicities, or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use. The FDA and other regulatory authorities have substantial discretion in the approval process and may refuse to accept our BLA applications and decide that our data are insufficient and require additional preclinical studies or clinical trials. The same may happen with review of our product candidates by foreign regulatory authorities. In addition, varying interpretations of the data obtained from preclinical studies and clinical trials could delay, limit, or prevent marketing approval of our product candidates. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render our approved product not commercially viable. If we experience delays in obtaining approval or if we fail to obtain approval of any product candidates we may develop, the commercial prospects for those product candidates and our ability to generate revenues will be materially impaired and we may lose competitive lead time as similar products enter the market.

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 the development of allogeneic T cell and NK cell therapies for cancer. We may also request regulatory approval of future CAR-T or CAR-NK cell therapy product candidates by target, regardless of cancer type or origin, which the FDA may have difficulty accepting if our clinical trials have only involved cancers of certain types or 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. The opinion of an Advisory Committee, although not binding, may have a significant impact on our ability to obtain marketing approval of our product candidates based on our completed clinical trials, as the FDA often adheres to an 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.

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 and CAR-NK cell therapy 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 additional 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 trial, even if the FDA has reviewed the study and cleared its initiation. Conversely, the FDA can place an IND 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 events in clinical trials conducted by others may cause the FDA or other regulatory bodies to change the requirements for approval of any of our product candidates.

We may apply for Regenerative Medicine Advanced Therapy designation, Breakthrough Therapy Designation, and Fast Track Designation review by the FDA for some, if not all, of our allogeneic CAR-T and CAR-NK cell therapies, but there are no assurances that we will receive any of these forms of review or that the FDA will grant priority review to any of our product candidates.

We may seek Regenerative Medicine Advanced Therapy, or RMAT, designation for some or all of our CAR-T and CAR-NK cell therapy product candidates in the United States. In 2017, the FDA established the RMAT designation as part of its implementation of the 21st Century Cures Act to expedite review of any biologic or drug that meets the following criteria: it qualifies as a RMAT, which is defined as a cell and gene therapy, therapeutic tissue engineering product, human cell and tissue product, or any combination product using such therapies or products, with limited exceptions; it is intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition; and preliminary clinical evidence indicates that the biologic has the potential to address unmet medical needs for such a disease or condition. Like Breakthrough Therapy Designation, RMAT designation provides potential benefits that include early interactions and more frequent meetings with the FDA to discuss the development plan for the product candidate and eligibility for rolling review and priority review. Product candidates granted RMAT designation may also be eligible for accelerated approval on the basis of surrogate or intermediate clinical trial endpoints 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. RMAT-designated products that receive accelerated approval may, as appropriate, fulfill their post-approval requirements through the submission of clinical evidence, clinical trials, patient registries, or other sources of real-world evidence such as electronic health records, through the collection of larger confirmatory data sets as agreed with the FDA, or via post-approval monitoring of all patients treated with such therapy prior to approval of the therapy. There is no assurance that we will be able to obtain RMAT designation for any of our product candidates. RMAT designation does not change the FDA's evidentiary standards for product approval, including demonstrating safety and efficacy and there is no assurance that such designation will result in expedited review or approval or that the approved indication will not be narrower than the indication covered by the designation. Additionally, RMAT designation can be rescinded if the criteria for eligibility cease to be met as clinical data emerge.

We may also seek Breakthrough Therapy Designation for some or all of our CAR-T and CAR-NK cell therapy product candidates. A breakthrough therapy is defined as a therapy that is intended, alone or in combination with one or more other therapies, to treat a serious or life-threatening disease or condition, and preliminary clinical evidence indicates that the therapy may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For therapies that have been designated as breakthrough therapies, interaction and communication between the FDA and us can help to identify the most efficient path for clinical development. Therapies designated as breakthrough therapies by the FDA may also be eligible for priority review and accelerated approval. Designation as a breakthrough therapy is within the discretion of the FDA. Accordingly, even if we believe one of our product candidates meets the criteria for designation as a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a

Breakthrough Therapy Designation for a product candidate may not result in a faster development process, review, or approval compared to therapies considered for approval under conventional FDA procedures and does not ensure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify as breakthrough therapies, the FDA may later decide that such product candidates no longer meet the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

We may also seek Fast Track Designation for some or all of our CAR-T and CAR-NK cell therapy product candidates. If a therapy is intended for the treatment of a serious or life-threatening condition and the therapy demonstrates the potential to address unmet medical needs for this condition, we may apply for Fast Track Designation. The FDA has broad discretion whether or not to grant this designation, so even if we believe a particular product candidate is eligible for this designation, we cannot assure that the FDA would decide to grant it. Even if we do receive Fast Track Designation, we may not experience a faster development process, review, or approval compared to conventional FDA procedures. For Fast Track product candidates, we might have more interactions with the FDA and the FDA may initiate review of sections of a Fast Track product marketing application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by us, that a Fast Track product candidate may be effective. We will also be required to provide, and the FDA must approve, a schedule for the submission of the remaining information and we will be required to pay applicable user fees. However, the FDA's time period goal for reviewing an application does not begin until the last section of the application is submitted. The FDA may withdraw Fast Track Designation if it believes that the designation is no longer supported by data from our clinical development program. Fast Track Designation alone does not guarantee qualification for the FDA's priority review procedures.

Finally, if the FDA determines that a product candidate offers a treatment for a serious condition and, if approved, the product would provide a significant improvement in safety or efficacy, the FDA may designate the product candidate for priority review. A priority review designation means that the goal for the FDA to review a BLA application is six months, rather than the standard review period of ten months. The FDA has broad discretion with respect to whether or not to grant priority review status to a product candidate, so even if we believe a particular product candidate is eligible for such designation or status, the FDA may decide not to grant it. Moreover, a priority review designation does not necessarily result in expedited regulatory review or approval process or necessarily confer any advantage with respect to approval compared to conventional FDA procedures. Receiving priority review from the FDA does not guarantee approval within the six-month review cycle or at all.

We may seek orphan drug designation for some or all of our allogeneic CAR-T and CAR-NK cell therapy 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 biologic or drug 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 biologic or drug in the United States will be recovered from sales in the United States for that biologic or drug. In order to obtain orphan drug designation, we must make a request before submitting our BLA for a particular product candidate. After the FDA grants orphan drug designation, the generic or trade name, or the chemical name or a meaningful description of our biologic, its designated orphan use and date of designation, and our company name 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 candidate 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 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 the FDA finds that we, as holder of the orphan drug exclusivity, have not shown that we can ensure 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 allogeneic CAR-T and CAR-NK cell therapy 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 ensure 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 our product candidates, we may never receive such designations.

Our allogeneic CAR-T and CAR-NK cell therapy product candidates will be regulated as biological products, or biologics, and therefore may be subject to uncertainty regarding regulatory exclusivity.

The Biologics Price Competition and Innovation Act of 2009, or 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, or, collectively, the Affordable Care Act or the ACA, 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 our product candidates 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 our product candidates to be reference products for competing products, potentially creating the opportunity for biosimilar 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 drug products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

Even if we obtain marketing approvals for our product candidates, the terms of such approvals and ongoing regulation of our products could require substantial expenditure of resources and may limit how we manufacture and market our products, which could materially impair our ability to generate revenues. Any product candidate for which we obtain marketing approval could be subject to restrictions or withdrawal from the market, and we may be subject to substantial penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising, and promotional activities for such product, will be subject to continuous requirements of and review by the FDA or other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, including mandatory post-marketing safety reporting; registration and listing requirements; cGMP requirements relating to quality control, quality assurance, and corresponding maintenance of records and documents; and requirements regarding

recordkeeping. Even if we receive marketing approval of a product candidate, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval or contain requirements for costly post-marketing testing and studies to further assess the safety or efficacy of the product. The FDA also may place other conditions on our approval, including the requirement for a Risk Evaluation and Mitigation Strategy, or REMS, to ensure the safe use of the product by reinforcing medication use behaviors and actions. If the FDA concludes a REMS is needed, we must submit a proposed REMS before our product candidate will be eligible to receive marketing approval. A REMS could include medication guides, physician communication plans, or other elements to ensure safe use, such as restricted distribution methods, patient registries, and other risk minimization tools.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our product candidates. If we are slow to address or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects, and ability to achieve or sustain profitability. Any government investigation of alleged violations of law, including investigations of any of suppliers or CMOs, could require us to expend significant time and resources in response and could generate negative publicity. Accordingly, we and our suppliers and CMOs will continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance, and quality control. If we are not able to comply with post-approval regulatory requirements, we could have the marketing approval for our products withdrawn by regulatory authorities and our ability to market any product candidates could be limited, which could adversely affect our ability to achieve or sustain profitability. Furthermore, the cost of compliance with post-approval regulations, including REMS, may have a negative effect on our business, financial condition, results of operations, and prospects.

The FDA and other regulatory authorities closely regulate the post-approval marketing and promotion of biologics to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA and other regulatory authorities impose stringent restrictions on manufacturers' communications regarding off-label use, and if we market our products for unapproved indications, we may be subject to enforcement action for off-label marketing by the FDA and other federal and state enforcement agencies, including the U.S. Department of Justice. Violation of the federal Food, Drug, and Cosmetic Act, or the FDCA, and other statutes, including the federal False Claims Act, relating to the promotion and advertising of prescription products, may also lead to investigations or allegations of violations of federal and state healthcare fraud and abuse laws and state consumer protection laws.

In addition, later discovery of previously unknown problems with our products or the manufacturing of our products, may cause:

- restrictions on our products or the manufacturing of our products;
- restrictions on the labeling or marketing of our products;
- restrictions on the distribution or use of our products;
- requirements to conduct post-marketing clinical trials;
- receipt of warning or untitled letters;
- withdrawal of our products from the market;
- refusal to approve pending BLAs or BLA supplements that we submit;
- recall of our products;

- fines, restitution, or disgorgement of profits or revenue;
- suspension or withdrawal of marketing approvals;
- suspension of any ongoing clinical trials;
- refusal to permit the import or export of our products;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity and adversely affect our reputation. The occurrence of any event or penalty described above may inhibit our ability to commercialize any product candidates we develop and adversely affect our business, financial condition, results of operations, and prospects.

We may never obtain approval to commercialize our product candidates outside the United States, which could limit our ability to recognize the full market potential of our product candidates and could materially impair our ability to generate revenues.

In order to market and sell any of our product candidates in the European Union, or EU, or other foreign jurisdictions, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and jurisdictions and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other jurisdictions. The failure to obtain approval in one jurisdiction may negatively impact our ability to obtain approval elsewhere. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our product candidates in multiple jurisdictions, which could materially impair our ability to generate revenue.

In June 2016, the electorate in the United Kingdom voted in favor of leaving the EU, commonly referred to as Brexit. Following protracted negotiations, the United Kingdom left the EU on January 31, 2020. Under the withdrawal agreement, there is a transitional period, during which EU laws continued to apply in the United Kingdom, which ended on December 31, 2020. The United Kingdom and EU have signed an EU-UK Trade and Cooperation Agreement, which became provisionally applicable on January 1, 2021 and which has entered into force permanently on May 1, 2021, following formal approval by the United Kingdom and the EU. This agreement provides details on how some aspects of the United Kingdom and the EU's relationship regarding pharmaceutical products will operate; however, there are still many uncertainties. Since the regulatory framework in the United Kingdom covering quality, safety, and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales, and distribution of pharmaceutical products is derived from EU directives and regulations, Brexit could materially impact the future regulatory regime which applies to products and the approval of product candidates in the United Kingdom or the EU, as there is now potential for the UK regulations on pharmaceutical products to diverge from the EU regulations. It remains to be seen how Brexit will impact regulatory requirements for product candidates and products in the United Kingdom in the long-term. In the meantime, the Medicines and Healthcare products Regulatory Agency, or the MHRA, the United Kingdom medicines and medical devices regulator, has published detailed guidance for industry and organizations to follow from January 1, 2021, which will be updated as necessary. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, may force us to restrict or delay efforts to seek regulatory approval in the United Kingdom for our product candidates, which could harm our business.

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

The chRDNA genome-editing technologies that we use are novel. Public perception may be influenced by claims that genome editing is unsafe, and therapeutic products generated through genome 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, if approved for marketing, 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 genome editing may result in fewer physicians prescribing our treatments or may reduce the willingness of patients to accept our products. In addition, given the novel nature of genome-edited and CAR-T and CAR-NK cell therapies, governments may place import, export, or other restrictions in order to retain control or limit the use of such technologies. Increased negative public opinion or more restrictive government regulations, either in the United States or internationally, could have a negative effect on our business or financial condition and may delay or impair the commercialization of our product candidates or demand for such products.

In particular, genome-editing technology is subject to public debate and heightened regulatory scrutiny due to ethical concerns relating to the potential application of genome-editing technology to human embryos or the human germline. We do not apply genome-editing technologies to human embryos or the human germline. In April 2016, a group of scientists reported on their attempts to edit the genome of human embryos to modify the gene for hemoglobin beta. This is the gene in which a mutation occurs in patients with the inherited blood disorder beta thalassemia. Although this research was purposefully conducted in embryos that were not viable, the work prompted calls for a moratorium or other types of restrictions on genome editing of human eggs, sperm, and embryos. Additionally, in November 2018, He Jiankui, Ph.D., a biophysics researcher who was an associate professor in the Department of Biology of the Southern University of Science and Technology in Shenzhen, China, reportedly claimed he had created the first human genome-edited babies, twin girls. This claim, and another that Dr. He had helped create a second genome-edited pregnancy, was subsequently confirmed by Chinese authorities and was negatively received by the public, in particular by those in the scientific community. News reports indicate that Dr. He was sentenced to three years in prison and reportedly fined $430,000 in December 2019 by the Chinese government for illegal medical practice in connection with such activities. In the wake of the claim, the World Health Organization established a new advisory committee to create global governance and oversight standards for human genome editing. The Alliance for Regenerative Medicine in Washington, D.C., of which we are a member, has called for a voluntary moratorium on the use of genome-editing technologies, including CRISPR, in research that involves altering human embryos or human germline cells and has also released a bioethical framework of principles for the use of genome editing in therapeutic applications endorsed by a number of companies that use genome-editing technologies. Similarly, the NIH has announced that it would not fund any use of genome-editing technologies in human embryos, noting that there are multiple existing legislative and regulatory prohibitions against such work, including the Dickey-Wicker Amendment, which prohibits the use of appropriated funds for the creation of human embryos for research purposes or for research in which human embryos are destroyed.

Although we do not use our genome-editing technologies to edit human embryos or the human germline, such public debate about the use of genome-editing technologies in human embryos and heightened regulatory scrutiny could prevent or delay our development of our product candidates and, if approved, the market acceptance of our products. More restrictive government regulations or negative public opinion would have a negative effect on our business or financial condition. Adverse events in our clinical trials or those of our competitors or of academic researchers utilizing genome-editing technologies, even if not ultimately attributable to product candidates we may identify and develop, and the resulting publicity, could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of our product candidates, stricter labeling requirements for those product candidates that are approved, and a decrease in demand for any such product candidates.

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.

To achieve commercial success for any approved product for which we retain sales and marketing responsibilities, we must develop and build a sales and marketing team or make arrangements with third parties to perform these services. There are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time consuming and could delay our product launch. We will have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train, and retain marketing and sales personnel. If the commercial launch of our product for which we have recruited a sales force and established marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses, which may be costly and our investment would be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our products on our own include:

- our inability to recruit, hire, train, and retain adequate numbers of effective sales, marketing, customer service, medical affairs, and other support personnel;
- our inability to equip sales personnel with effective materials, including sales literature, to help them educate physicians and other healthcare providers regarding our product candidates and their approved indications;
- our inability to effectively manage a geographically dispersed sales and marketing team;
- the inability of medical affairs personnel to negotiate arrangements for reimbursement and other acceptance by payors;
- the inability to price our products at a sufficient price point to ensure an adequate and attractive level of profitability; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we are unable or decide not to establish internal sales, marketing, and distribution capabilities, we will need to enter into arrangements with third parties to perform sales, marketing, and distribution services. In such cases, our product revenue or the profitability to us from these revenue streams is likely to be lower than if we were to market and sell any product candidates that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell and market our product candidates or may be unable to do so on terms that are favorable to us. We likely will have little control over such third parties and they may fail to devote the necessary resources and attention to sell and market our product candidates effectively. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we may not be successful in commercializing our product candidates, and our business, financial condition, results of operations, and prospects will be materially adversely affected.

Our products may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers, and others in the medical community.

The use of CAR-T and CAR-NK cells as potential cancer treatments is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers, and others in the medical community. Ethical, social, and legal concerns about genome editing could result in the development of

additional regulations restricting or prohibiting our products. Even with the requisite approvals from the FDA and other regulatory authorities internationally, the commercial success of our product candidates will depend, in significant part, on the acceptance of physicians, patients, and healthcare payors of products generated through genome editing in general, and our allogeneic CAR-T and CAR-NK cell therapy product candidates in particular, as medically necessary, cost-effective, safe, and effective therapies. We expect physicians in the large bone marrow transplant centers to be particularly important to the market acceptance of our CB-010, CB-011, and CB-012 product candidates and we may not be able to adequately educate them on the benefits and risks associated with the use of our product candidates to address concerns and foster acceptance, 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 safe and effective treatments;
- the potential and perceived advantages of our product candidates over alternative treatments;
- the prevalence, identification, or severity of any side effects;
- product labeling or product insert requirements of the FDA or other regulatory authorities, including limitations or warnings contained in the product labeling;
- the timing of market introduction of our product candidates as well as competitive products;
- the cost of treatment of our product candidates 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 for our product candidates in the absence of coverage;
- 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 cell therapy products, genome-editing technologies, or other therapeutic approaches are introduced that are more favorably received than our products, are more cost effective, or render our products obsolete.

The market opportunities for our product candidates may be smaller than we currently believe and limited to those patients who are ineligible for or have failed prior treatment, which may adversely affect our business. Because the target patient populations of our product candidates are small, we must be able to successfully identify patients and capture a significant market share to achieve profitability and growth.

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. New studies may change the estimated incidence or prevalence of these cancers. The number of eligible 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. Given the small number of patients who have the eligibility criteria and diseases that we are targeting, it is critical to our ability to become profitable that we successfully identify such patients. The effort to identify patients with diseases we seek to treat is in early stages, and we cannot accurately predict the number of patients for whom treatment might be possible. Additionally, the potentially addressable patient population for each of our product candidates may be limited or may not be amenable to treatment with our product candidates, and new patients may become increasingly difficult to identify or gain access to, which would adversely affect our business, financial condition, results of operations, and prospects. 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.

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

The regulations that govern marketing approvals, pricing, and reimbursement for new biologic products vary widely from country to country. Some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some non-U.S. markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial marketing approval is granted. As a result, we might obtain marketing approval for our product candidates in a particular country, but then be subject to price regulations that delay our commercial launch of such product candidates, possibly for lengthy time periods, and such delays would negatively impact the revenues we are able to generate from the sale of our product candidates in that country. Pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if any product candidates we may develop obtain marketing approval.

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, 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 often 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. Furthermore, 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 of our product candidates for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

There may be significant delays in obtaining reimbursement for newly approved products, and reimbursement coverage may be more limited than the purposes for which the product is approved by the FDA or

similar regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that our product candidates will be paid for in all cases or at a rate that will cover our costs, including research, development, manufacture, sale, and distribution. Interim reimbursement levels for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of our product candidate and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost products, and may be incorporated into existing payments for other services. Net prices for our product candidates may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of products from countries where our product candidates may be sold at lower prices than in the United States.

Third-party payors, whether domestic or foreign, 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 healthcare systems that could impact our ability to sell our product candidates, if approved, profitably. There have been, and likely will continue to be, legislative and regulatory proposals at the federal and state levels directed at broadening the availability of, and containing or lowering the cost of, healthcare. The implementation of cost containment measures that third-party payors and healthcare providers are instituting and any other healthcare reforms may prevent us from being able to generate, or may reduce, our revenues from the sale of our product candidates, if approved, and our product candidates may not be profitable. Such reforms could have an adverse effect on anticipated revenue from product candidates for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates. Even if our product candidates are successful in clinical trials and receive marketing approval, we cannot provide any assurances that we will be able to obtain and maintain third-party payor coverage or adequate reimbursement for our product candidates in whole or in part.

Enacted and future healthcare legislation may increase the difficulty and cost for us to obtain approval of and commercialize our product candidates and could adversely affect our business.

The federal Affordable Care Act substantially changed the way healthcare is financed by both the government and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act, among other things: (i) introduced a new average manufacturer price definition for biologics and drugs that are inhaled, infused, instilled, implanted, or injected and not generally dispensed through retail community pharmacies; (ii) increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and expanded rebate liability from fee-for-service Medicaid utilization to include the utilization of Medicaid managed care organizations as well; (iii) established a branded prescription drug fee that pharmaceutical manufacturers of branded prescription drugs must pay to the federal government; (iv) expanded the list of covered entities eligible to participate in the 340B drug pricing program; (v) established a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 70% (increased from 50% in 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; (vi) expanded eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability; (vii) created a licensure framework for follow on biologic products; and (viii) established a Center for Medicare & Medicaid Innovation, or CMMI, at the Centers for Medicare and Medicaid Services, or CMS, to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending. Since its enactment, there have been judicial challenges to certain aspects of the Affordable Care Act, as well as efforts by Congress to repeal or replace certain aspects of the Affordable Care Act. In the future, Congress may consider other legislation to repeal or replace elements of the Affordable Care Act, agencies may further alter their implementation of elements of the Affordable Care Act, and other judicial challenges to elements of the

Affordable Care Act may be brought. The extent to which any such changes may impact our business or financial condition is uncertain.

Other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. The American Taxpayer Relief Act of 2012, or ATRA, among other things, reduced Medicare payments to several 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. New laws may result in additional reductions in Medicare and other healthcare funding, which may materially adversely affect customer demand and affordability for our product candidates and, accordingly, our business, financial condition, results of operations, and prospects. Additional changes that may affect our business include the expansion of new programs such as Medicare payment for performance initiatives for physicians under the Medicare Access and CHIP Reauthorization Act of 2015, or MACRA, which first affected physician payment in 2019. At this time, it is unclear how the introduction of the Medicare quality payment program will impact overall physician reimbursement.

Also, there has been heightened governmental scrutiny over the manner in which drug manufacturers set prices for their marketed products, which have resulted in several congressional inquiries and proposed bills and initiatives, as well as state efforts, designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products.

We expect that these and other healthcare reform measures in the future, may result in more rigorous coverage criteria and lower reimbursement, and in addition, downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government-funded programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may hinder us in generating revenue, attaining profitability, or commercializing our cell therapy products once, and if, marketing approval is obtained.

In the EU, coverage and reimbursement status of any product candidates for which we obtain regulatory approval are provided for by the national laws of EU member states. The requirements may differ across the EU member states. In markets outside the United States and the EU, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies. Also, at the national level, actions have been taken to enact transparency laws regarding payments between pharmaceutical companies and healthcare professionals.

We cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative action in the United States, the EU, or any other jurisdiction. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that we may have obtained and we may not achieve or sustain profitability.

We face significant competition from other biotechnology and pharmaceutical companies, which may result in other companies developing or commercializing products before, or more successfully than, we do, thus rendering our product candidates non-competitive or reducing the size of our market, and our operating results will suffer if we fail to compete effectively.

The biopharmaceutical industry, and the genome-editing, cell therapy, and immuno-oncology industries specifically, is characterized by intense competition and rapid innovation. Our potential competitors include major multi-national 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 staffs, established

manufacturing capabilities and facilities, and experienced marketing organizations with well-established sales forces. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies that have greater resources. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated on our competitors. Competition may increase further as a result of advances in the commercial applicability of genome editing or other new technologies and greater availability of capital for investment in these industries. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient enrollment for participation in clinical trials, as well as in acquiring technologies complementary to, or necessary for, our development programs. In addition, due to the intense research and development taking place in the genome-editing field, including by us and our competitors, the intellectual property landscape is in flux and highly competitive. There may be significant intellectual property-related litigation and proceedings relating to our owned and in-licensed, and other third-party, intellectual property rights in the future. Our commercial opportunities 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 to administer, have broader acceptance and higher rates of reimbursement by third-party payors, or are less expensive than any product candidates 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. Additionally, genome-editing technologies developed by our competitors may render our product candidates uneconomical or obsolete, and we may not be successful in marketing any product candidates we may develop against competitor products. The key competitive factors affecting the success of all of our product candidates are likely to be their efficacy, safety, and availability of reimbursement.

Our focus is on the development of cell therapies using our chRDNA genome-editing technology. We are aware of several companies focused on developing therapies for various indications using CRISPR-Cas9 genome-editing technology including CRISPR Therapeutics AG, Editas Medicine, Inc., and Intellia. In addition, several academic groups have developed new genome-editing technologies based on CRISPR-Cas9, such as base editing and prime editing, as well as alternative CRISPR systems, which may have utility in therapeutic development. We believe companies such as Beam Therapeutics Inc., Metagenomi Technologies, LLC, Prime Medicine, Inc., and Scribe Therapeutics, Inc. are developing alternative CRISPR systems. Multiple academic labs and companies have also published on other CRISPR-associated nuclease variants that can edit human DNA. There are also companies developing therapies using non-CRISPR genome-editing technologies, such as transcription activator-like effector nucleases, meganucleases, and zinc finger nucleases. These companies include Allogene Therapeutics, Inc., bluebird bio, Inc., Cellectis S.A., Precision BioSciences, Inc., and Sangamo Therapeutics. In addition to competition from other genome-editing therapies or gene or cell therapies, any product we may develop may also face competition from other types of therapies, such as small molecule, antibody, or protein therapies.

Our allogeneic CAR-T and CAR-NK cell therapy product candidates face significant competition from multiple companies, including Allogene, Atara Biotherapeutics, Inc., Cellectis, Celyad Oncology SA, CRISPR Therapeutics AG, Fate Therapeutics, Inc., Poseida Therapeutics, Inc., Precision BioSciences, and Sangamo Therapeutics. There are over 200 preclinical- and clinical-stage autologous and allogeneic anti-CD19 CAR-T programs, some of which will be competitive with our CB-010 product candidate, and over 90 preclinical- and clinical-stage autologous and allogeneic anti-BCMA CAR-T programs, some of which will be competitive with our CB-011 product candidate. Additionally, other companies are developing allogeneic CAR-T cell therapies for AML.

To become and remain profitable, we must develop and eventually commercialize product candidates with significant market potential, which will require us to be successful in a range of challenging activities. These activities can include completing preclinical studies and clinical trials of our product candidates; obtaining marketing and reimbursement approval for these product candidates; manufacturing, marketing, and selling those products that are approved; and satisfying any post-marketing requirements. We may never succeed in any or all

of these activities and, even if we do, we may never generate revenues that are significant or large enough to achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the price of our common stock and could impair our ability to raise capital, maintain our research and development efforts, expand our business, or continue our operations. A decline in the price of our common stock also could cause stockholders to lose all or part of their investment.

Our business operations and current and future relationships with clinical site investigators, healthcare professionals, consultants, third-party payors, patient organizations, and customers will be subject to applicable healthcare regulatory laws, which could expose us to penalties.

Our business operations and current and future arrangements with clinical site investigators, healthcare professionals, consultants, third-party payors, patient organizations, and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we market, sell, and distribute our product candidates, if approved. Such laws include:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving, or providing any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, order, or recommendation of, any good, facility, item, or service, for which payment may be made, in whole or in part, under U.S. federal and state healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the U.S. federal civil and criminal false claims laws, including the civil False Claims Act, which, among other things, impose criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the U.S. government, claims for payment or approval that are false or fraudulent; knowingly making, using, or causing to be made or used a false record or statement material to a false or fraudulent claim; or from knowingly making a false statement to avoid, decrease, or conceal an obligation to pay money to the U.S. government. In addition, the government may assert that a claim including items and services resulting from a violation of the U.S. federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act;

- the U.S. federal civil monetary penalties laws, which impose civil fines for, among other things, the offering or transfer of remuneration to a Medicare or state healthcare program beneficiary if the person knows or should know it is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of services reimbursable by Medicare or a state healthcare program, unless an exception applies;

- the U.S. Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing, or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items, or services; similar to the U.S. federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 and its implementing regulations, which also imposes certain obligations, including

mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information without appropriate authorization by covered entities subject to the rule, such as health plans, healthcare clearinghouses, and healthcare providers as well as their business associates that perform certain services involving the use or disclosure of individually identifiable health information;

- the U.S. Food, Drug, and Cosmetic Act, which prohibits, among other things, the adulteration or misbranding of drugs, biologics, and medical devices;

- the U.S. Physician Payments Sunshine Act and its implementing regulations, which requires certain manufacturers of drugs, devices, biologics, and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to the government information related to certain payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists, and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members;

- U.S. federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;

- analogous U.S. state laws and regulations, including state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales, and marketing arrangements and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities; state and local laws that require the registration of pharmaceutical sales representatives; and state laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and

- similar healthcare laws and regulations in the EU and other jurisdictions, including reporting requirements detailing interactions with and payments to healthcare providers and laws governing the privacy and security of certain protected information, such as the General Data Protection Regulation, or the GDPR, which imposes obligations and restrictions on the collection and use of personal data, including health data, relating to individuals located in the EU.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices, including our relationships with physicians and other healthcare providers, may not comply with current or future statutes, regulations, agency guidance, or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal, and administrative penalties; damages; fines; exclusion from government-funded healthcare programs, such as Medicare and Medicaid or similar programs in other jurisdictions; integrity oversight and reporting obligations to resolve allegations of non-compliance; disgorgement; individual imprisonment; contractual damages; reputational harm; diminished profits; and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be

subject to criminal, civil, or administrative sanctions, including exclusions from government-funded healthcare programs and imprisonment, which could affect our ability to operate our business. Furthermore, defending against any such actions can be costly, time-consuming, and may require significant personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired.

Our business activities will be subject to the U.S., and may be subject to certain foreign, export and import controls, embargoes, anti-corruption laws, and anti-money laundering laws and regulations including the Foreign Corrupt Practices Act, or FCPA.

We will be subject to export control and import laws and regulations, including the U.S. Export Administration Regulations; U.S. Customs regulations; various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls; the U.S. Foreign Corrupt Practices Act of 1977, as amended; the U.S. domestic bribery statute contained in 18 U.S.C. § 201; the U.S. Travel Act; the USA PATRIOT Act of 2001; and other state and national anti-bribery and anti-money laundering laws in the jurisdictions in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties to sell our product candidates outside the United States once we receive regulatory approval in such jurisdictions or to obtain necessary permits, licenses, and other regulatory approvals for our product candidates. We may also have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of these activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences.

If we expand our business activities outside the United States, we will be subject to the FCPA and similar anti-bribery or anti-corruption laws, regulations, and rules of other countries in which we may operate. The FCPA generally prohibits offering, promising, giving, or authorizing others to give anything of value, either directly or indirectly, to a non-United States government official in order to influence official action, or otherwise obtain or retain business. The FCPA also requires public companies to make and keep books and records that accurately and fairly reflect the transactions of the company and to devise and maintain an adequate system of internal accounting controls. Our business is heavily regulated and therefore involves significant interaction with public officials, including, potentially in the future, officials of non-United States governments. Additionally, in many other countries, the healthcare providers who prescribe pharmaceuticals are employed by their government, and the purchasers of pharmaceuticals are government entities; therefore, our dealings with these prescribers and purchasers will be subject to regulation under the FCPA. Recently the U.S. Securities and Exchange Commission, or SEC, and the U.S. Department of Justice have increased their FCPA enforcement activities with respect to biotechnology and pharmaceutical companies. There is no certainty that all of our employees, suppliers, CMOs, CROs, or other third parties providing services to us will comply with all applicable laws and regulations, particularly given the high level of complexity of these laws. Violations of these laws and regulations could result in fines; criminal sanctions against us, our management, or other employees; the closing down of facilities, including those of our suppliers and CMOs; requirements to obtain export licenses; cessation of business activities in sanctioned countries; implementation of compliance programs; and prohibitions on the conduct of our business. Any such violations could include prohibitions on our ability to offer our product candidates in one or more jurisdictions as well as difficulties in manufacturing or continuing to develop our product candidates, and could materially damage our reputation, our ability to attract and retain employees, and our business, financial condition, results of operations, and prospects.

We face potential liability related to the privacy of health information we may obtain from our clinical trials.

Most healthcare providers are subject to privacy and security regulations promulgated under HIPAA, as amended by the Health Information Technology for Economic and Clinical Health, or HITECH, Act. We are not currently classified as a covered entity or business associate under HIPAA and thus are not subject to its requirements or penalties. However, any person may be prosecuted under HIPAA's criminal provisions either directly or under aiding-and-abetting or conspiracy principles. Consequently, depending on the facts and circumstances, we could face substantial criminal penalties if we knowingly receive individually identifiable health information from a HIPAA-covered healthcare provider or research institution that has not satisfied HIPAA's requirements for disclosure of individually identifiable health information. In addition, in the event that we receive sensitive personally identifiable information, including health information, we may be subject to state laws requiring notification of affected individuals and state regulators in the event of a breach of personal information, which is a broader class of information than the health information protected by HIPAA.

We cannot assure you that we, our CROs, our clinical trial sites, and our clinical trial principal investigators with access to personally identifiable and other sensitive or confidential information relating to the patients in our clinical trials will not breach contractual obligations, or that we or they will not experience data security breaches or attempts thereof, which could have a corresponding effect on our business, including putting us in breach of our obligations under privacy laws and regulations as discussed above, which could in turn adversely affect our business, financial condition, results of operations, and prospects. We cannot assure you that our contractual measures and our own privacy and security-related safeguards will protect us from the risks associated with the third-party processing, storage, and transmission of such information.

Compliance with global privacy and data security requirements could result in additional costs and liabilities to us or inhibit our ability to collect and process data globally, and the failure to comply with such requirements could subject us to significant fines and penalties, which may have a material adverse effect on our business, financial condition, results of operations, or prospects.

The regulatory framework for the collection, use, safeguarding, sharing, transfer, and other processing of information worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. Globally, many jurisdictions have established their own data security and privacy frameworks. In the United States, there are a broad variety of data protection laws that are either currently in place or under way and a wide range of enforcement agencies at both the state and federal levels have the authority to review companies for privacy and data security concerns based on general consumer protection laws. The Federal Trade Commission, or FTC, and state Attorneys General have been aggressive in reviewing privacy and data security protections for consumers. New laws also are being considered at both the state and federal levels. For example, the California Consumer Privacy Act, or CCPA, which went into effect on January 1, 2020 provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Many other states are considering similar legislation. A broad range of legislative measures also have been introduced at the federal level. There also is the threat of consumer class actions related to these laws and the overall protection of personal data.

The data privacy laws in the EU have also been significantly reformed. The collection, use, disclosure, transfer, or other processing of personal data regarding individuals in the EU, including personal health data, is subject to the GDPR, which took effect across all member states of the European Economic Area, or EEA, in May 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR has expanded the definition of personal data to include coded data and requiring changes to informed consent practices and more detailed notices for clinical trial patients and investigators. In addition, the GDPR also

imposes strict rules on the transfer of personal data to countries outside the EU, including the United States and, as a result, increases the scrutiny that clinical trial sites located in the EEA should apply to transfers of personal data from such sites to countries that are considered to lack an adequate level of data protection, such as the United States. The GDPR also permits data protection authorities to require destruction of improperly gathered or used personal information or impose substantial fines for violations of the GDPR, which can be up to 4% of global revenues or €20 million, whichever is greater, and it also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR provides that EU member states may make their own additional laws and regulations limiting the processing of personal data, including genetic, biometric, or health data.

Risks Relating to Our Intellectual Property

If we do not possess intellectual property rights covering our proprietary chRDNA genome-editing technology and our product candidates, we may not be able to block competitors or to compete effectively in our markets.

Our industry is subject to rapid technological change and our success depends in large part on our ability to obtain and maintain intellectual property protection in the United States and other jurisdictions with respect to our chRDNA platform technology and product candidates. We rely upon a combination of patents, owned by us or in-licensed from a third party, and trade secrets to protect our technology and product candidates. We seek to protect our proprietary position by filing patent applications in the United States and in other jurisdictions related to our genome-editing technologies and product candidates that are important to our business. We also rely on know-how and continuing technological innovation to develop and maintain our competitive position. If we are unable to obtain or maintain intellectual property protection with respect to our chRDNA genome-editing platform technology and product candidates, our business, financial condition, results of operations, and prospects could be materially harmed.

The strength of patents in the biotechnology and pharmaceutical fields generally, and the genome-editing field in particular, involves complex legal and scientific questions and can be uncertain. For example, the scope of patent protection that will be available to us in the United States is uncertain. Changes in either the patent laws or their interpretation may diminish our ability to protect our intellectual property; obtain, maintain, defend, and enforce our intellectual property rights; and, more generally, could affect the value of our intellectual property or narrow the scope of our owned or in-licensed patents. With respect to both owned and in-licensed intellectual property, we cannot predict whether the patent applications we and our licensors are currently pursuing will issue as patents, whether the claims of any issued patents will provide sufficient protection, or whether, if these patents are challenged by our competitors, they will be found to be invalid, unenforceable, or not infringed.

The patent prosecution process is expensive, time-consuming, and complex, and we or our licensors may not be able to file, prosecute, maintain, enforce, or license all necessary or desirable patents at a reasonable cost or in a timely manner or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development in time to obtain patent protection before public disclosures are made. Although we may enter into non-disclosure or confidentiality agreements with parties who may have access to patentable aspects of our research and development, such as our employees, collaborators, CMOs, consultants, CROs, clinical trial site investigators and personnel, and other third parties, any one of these parties may breach their confidentiality agreements and disclose innovations before we can file a patent application, thereby jeopardizing our ability to seek patent protection.

The U.S. Patent and Trademark Office, or USPTO, requires compliance with a number of procedural, documentary, fee payment, and other similar provisions during the patent application process. The ultimate outcome of our pending patent applications is uncertain and the coverage claimed in a patent application can be significantly reduced before the patent is issued. Even as our patent applications, or those of our licensors, currently or in the future, issue as patents, they may not issue in a form that will provide us with any meaningful

protection, prevent competitors or other third parties from competing with us, dissuade companies from collaborating with us, or otherwise provide us with any competitive advantage. Periodic maintenance fees on issued patents are also required to be paid over the lifetime of the patent. Although an inadvertent lapse can, in many cases, be cured by payment of a late fee or by other means in accordance with applicable laws and regulations, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in the loss of patent rights. 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, nonpayment of fees, failure to properly legalize and submit formal documents, and the like. In the event we experience noncompliance events that cannot be corrected and we lose our patent rights, competitors could enter the market, which would have a material adverse effect on our business.

Composition of matter patents for biological and pharmaceutical products, such as CAR-based cell therapy products, often provide a strong form of intellectual property protection as such patents provide protection without specifying any particular method of use or manufacture. Methods of use patents can protect particular applications of a product or the manufacturing of a product; however, such method claims do not prevent a competitor from using a product that is identical to our product for an indication that is outside the scope of the patented method of use or making a product that is identical to our product using a different method of manufacturing. Our allogeneic CAR-T and CAR-NK cell therapy product candidates do not contain our chRDNA genome-editing technology; rather, our chRDNAs are used in the manufacturing of our CAR-T and CAR-NK products. It is virtually impossible to determine whether a competitor has infringed our chRDNA patents in making their products. Thus, even if we obtain patent protection on certain aspects of our technologies, such protection may not be enough to block our competitors from entering the market.

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

Filing, prosecuting, maintaining, enforcing, and defending patents on our genome-editing technologies and product candidates in countries outside the United States is expensive. Prosecution of patent applications is often a longer process and patents may grant at a later date, and with a shorter term, than in the United States. The requirements for patentability differ in certain jurisdictions and countries. Additionally, the patent laws of some countries do not afford intellectual property protection to the same extent as the laws of the United States. For example, unlike patent law in the United States, patent law in most European countries and many other jurisdictions precludes the patentability of methods of treatment and diagnosis of the human body. Other countries may impose substantial restrictions on the scope of claims, limiting patent protection to specifically disclosed embodiments. Consequently, we may not be able to prevent third parties from practicing our inventions in major markets outside the United States, or from selling or importing products 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 may export otherwise infringing products to jurisdictions 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 such competition. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in intellectual property laws in various jurisdictions worldwide.

Many companies have encountered significant problems in enforcing and defending intellectual property rights in various jurisdictions globally. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our intellectual property rights generally. Proceedings to enforce our intellectual property rights in various jurisdictions globally 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, could put related 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 file, 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 against competitors.

Many jurisdictions have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties if they are not practicing the patented technology. In addition, some countries limit the enforceability of patents against third parties, including government agencies. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected. Patent protection must be maintained on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. Accordingly, we may choose not to seek patent protection in certain jurisdictions or countries, and we will not have the benefit of patent protection in such jurisdictions or countries.

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

We may in the future be subject to claims that former employees, consultants, or other third parties have an interest in our patents or other intellectual property as an inventor, co-inventor, or owner of trade secrets. Although it is our policy to require our employees and consultants who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who conceives or develops intellectual property that we regard as our own or such party may breach the assignment agreement. We may have disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to obtain ownership or to defend against claims challenging inventorship. If we or our licensors fail in any such litigation, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, intellectual property or other proprietary information. 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 our management and other employees, and such claims could have a material adverse effect on our business, financial condition, results of operations, and prospects.

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

Although various extensions may be available, the life of a patent, and the protection it affords, is limited. In most countries including the United States, the natural expiration of a patent is generally 20 years after its first effective filing date. Our chRDNA genome-editing patents will expire in 2036, without any patent term extension. 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 the life of a patent can be increased based on certain delays caused by the USPTO, called patent term adjustments, or PTA, this increase can be reduced or eliminated based on certain delays caused by us during patent prosecution or if terminal disclaimers are filed over other co-owned patents or patent applications to avoid rejections based on obviousness-type double patenting. If we do not have sufficient patent life to protect our products, our business, financial condition, results of operations, and prospects will be adversely affected.

We may not obtain patent term extension, or PTE, for any product candidates we develop.

Depending upon the timing, duration, and specifics of any FDA marketing approval of any product candidates we develop, our U.S. patents may be eligible for limited PTE under the Drug Price Competition and Patent Term Restoration Action of 1984, or Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during clinical trials and the FDA regulatory review process. A PTE cannot extend the remaining term of a patent beyond a total of 14

years from the date of product approval, only one patent may be extended, and only a patent with claims covering the approved biologic, a method for its approved indication, or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the clinical phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy the applicable requirements. Moreover, we may not receive PTE or we may receive less time than we requested. If we are unable to obtain PTE or if the term of any such PTE is less than we request, we will be unable to rely on our patent position to forestall the marketing of competing products following our patent expiration, and our business, financial condition, results of operations, and prospects could be materially harmed.

Changes to the patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our genome-editing technologies and product candidates.

Patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or Leahy-Smith Act, signed into law on September 16, 2011, and its implementation could increase the uncertainties around patent protection, costs, and the enforcement or defense of our patents, all of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. The Leahy-Smith Act included a number of significant changes to U.S. patent law. Such provisions affect the way patent applications are prosecuted, redefine prior art, and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. In addition, the Leahy-Smith Act transformed the U.S. patent system from a first-to-invent to a first-to-file system, effective on March 16, 2013. For small companies, such as ours, this means that we must file our patent applications earlier in our development process rather than relying on proving priority of invention and it is now easier and less costly for third parties to attack our patents, all of which could harm our business, financial condition, results of operations, and prospects.

There is uncertainty regarding the patentability of certain inventions in the biotechnology and pharmaceutical areas. Recent decisions by the U.S. Supreme Court have either narrowed the scope of patent protection available in certain circumstances or weakened the rights of patent owners in particular situations. For example, in *Association for Molecular Pathology v. Myriad Genetics, Inc.*, the Supreme Court ruled that a "naturally occurring DNA segment is a product of nature and not patent eligible merely because it has been isolated," and invalidated Myriad Genetics' claims on isolated *BRCA1* and *BRCA2* genes. To the extent that our claims relate to naturally occurring antibodies or proteins, these may be deemed to be directed to natural products or to lack an inventive concept above and beyond an isolated natural product, and a court may decide the claims are invalid under *Myriad*. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO, and the relevant law-making bodies, as well as courts and patent offices in other countries, the laws and regulations governing patents could change in unpredictable ways that may weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future, which could have a material adverse effect on our existing patent portfolio and those of our licensors. Europe's planned Unified Patent Court may present uncertainties for our ability to protect and enforce our patent rights against competitors in Europe. Although this new court is being implemented to provide more certainty and efficiency to patent enforcement throughout Europe, it will also provide our competitors with a new forum to use to centrally challenge our patents, rather than having to seek invalidity or non-infringement decisions on a country-by-country basis. Once the Unified Patent Court is established, it will be several years before the scope of patent rights that will be recognized and the strength of patent remedies that will be provided is known.

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

The fields of genome editing and CAR-T and CAR-NK cell therapies are relatively new. No genome-edited products have been commercialized and there is ongoing patent litigation in the autologous CAR-T cell therapy space. Due to the widespread research and development that is taking place in these fields, including by us and our competitors, the intellectual property landscape is in flux and may remain uncertain for the

foreseeable future. There may be significant litigation and administrative proceedings that could affect our genome-editing technologies and product candidates. We have not, at this stage, performed any freedom-to-operate analyses on our product candidates to identify potential infringement risks.

Our commercial success depends upon our ability to develop, manufacture, market, and sell product candidates that we may develop or license and to use our proprietary technologies without infringing, misappropriating, or otherwise violating the intellectual property rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. Numerous U.S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing our product candidates. As industry, government, academia, and other biotechnology and pharmaceutical research expands and more patents are issued, the risk increases that our genome-editing technologies or product candidates may give rise to claims of infringement of the patent rights of others. We cannot guarantee that our genome-editing technologies, current and future product candidates, or the use or manufacture of such product candidates does not currently or will not in the future infringe third-party patents. There may be third-party patents with claims to compositions, methods of manufacture, or methods of use or treatment that could cover our current or future product candidates. It is possible that we may fail to identify relevant third-party patents or applications. Furthermore, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Thus, we cannot be certain that we were the first to file any patent application related to our genome-editing technologies or product candidates. Furthermore, patent rights are granted jurisdiction-by-jurisdiction, and our freedom to practice certain genome-editing technologies, including our ability to research, develop, and commercialize our product candidates, may differ by country.

Numerous third-party U.S. and foreign issued patents and pending patent applications exist in the fields of CRISPR genome editing as well as the field of immuno-oncology, including those relating to CAR constructs and CAR-T and CAR-NK cell therapy compositions and methods of use. Our CB-010 product candidate, which is an allogeneic anti-CD19 CAR-T cell therapy for the treatment of relapsed or refractory B-NHL, uses Cas9 chRDNAs to insert the CD19-specific CAR into the T cell genome and for an additional edit. Numerous parties have intellectual property relating to RNA-guided Cas9 genome editing. See the risk factor below entitled "*Our ability to continue to receive licensing revenues and to enter into new licensing arrangements related to the CRISPR-Cas9 CVC IP will be substantially impaired if the CVC IP is limited by administrative patent proceedings*." Our CB-011 product candidate, which is an allogeneic anti-BCMA CAR-T cell therapy to treat relapsed or refractory MM, and our CB-012 product candidate, which is an allogeneic anti-CD371 CAR-T cell therapy to treat relapsed or refractory AML, both use Cas12a chRDNAs to insert the CAR into the T cell genome and to make additional edits. We are aware of certain third-party patents assigned to the Broad Institute, Massachusetts Institute of Technology, and the President and Fellows of Harvard University relating to CRISPR-Cas12a genome-editing systems (Cas12a was then referred to as Cpf1), which will expire in late 2035 assuming no patent term extension or adjustment. Additionally, we are aware of third-party patents assigned to the U.S. government relating to anti-BCMA CARs as well as nucleic acids encoding such CARs, vectors comprising these nucleic acids, and host cells expressing such CARs, which will expire in 2033 assuming no patent term extension or adjustment. We are also aware of several third-party patents relating to various CAR compositions, methods of use, and components, including specific co-stimulatory regions. There is ongoing patent litigation over various third-party CAR patents, and unexpired patents that survive such litigation could be asserted against us.

Third parties may assert that our product candidates infringe their patents, including those listed above. Under U.S. patent laws, conducting clinical trials and seeking regulatory approval in the United States for therapeutic products are generally not considered an act of infringement, and similar exemptions are present in other countries. Nevertheless, third parties may allege that the act of filing our BLA or conducting clinical trials is outside of the safe harbor provision for activities reasonably related to the development and submission of information to the FDA for regulatory approval, and third parties may, upon our regulatory filing, assert

infringement claims based on existing patents or patents that may be issued prior to our BLA filing, regardless of the merit of such claims. Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, ownership, or priority. Patents 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. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome this presumption of validity, and there can be no assurance that a court of competent jurisdiction would invalidate the patent. A court of competent jurisdiction could hold that these third-party patents are valid, enforceable, and infringed, which could materially and adversely affect our ability to commercialize any product candidates we may develop, including CB-010, CB-011, CB-012, and CB-020, as well as any other product candidates or technologies covered by the asserted third-party patents.

If any third-party patents were held by a court of competent jurisdiction to cover our genome-editing technology used in the manufacturing of our product candidates or any product candidate itself or its indication, the holders of any such patents may be able to block our ability to commercialize the product candidate unless and until we obtained a license under the applicable patents, or such patents expire, or are held to be not infringed, unpatentable, invalid, or unenforceable. We may not be able to obtain a license to the blocking patents, or the terms of the license may not be commercially viable. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same intellectual property licensed to us, and it could require us to make substantial upfront, milestone, and royalty payments. 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 blocked or delayed, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We could also be forced, including by court order, to cease manufacturing and commercializing any infringing product candidates. In addition, we could be found liable for significant monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed the third-party patent. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on our business, financial condition, results of operations, and prospects. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of our management time and resources from our business.

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

Competitors may infringe our patents or our licensors' patents or challenge the validity of our or our licensors' patent rights. Even if our patents are unchallenged, they may not adequately prevent others from designing their products to avoid being covered by our claims. If the breadth or strength of protection provided by our patents and patent applications to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our or their ability to commercialize, our product candidates.

Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time-consuming and likely to divert significant resources from our core business, including distracting our management and scientific personnel from their normal responsibilities and generally harm our business. Additionally, a defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Thus, suing a third party for patent infringement puts our patents at risk and we may choose not to take such actions, thus allowing a competitor to infringe our patents. Grounds for a validity challenge in a counterclaim could be an alleged failure to meet any of several statutory requirements,

including lack of novelty, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Thus, 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, all of which could negatively impact our business. Even if we establish infringement in a legal proceeding against a third party, the court may decide not to grant an injunction against further infringing activity by the defendant and may only award money damages, which may or may not be an adequate remedy for us depending on the circumstances. Furthermore, because of the substantial amount of discovery required in connection with U.S. patent litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation.

Third parties may also raise similar claims of invalidity before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include *inter partes* review, or IPR, *ex parte* reexamination, and post grant review in the United States, and equivalent proceedings in foreign jurisdictions, including opposition proceedings before the European Patent Office, or EPO. Such proceedings could result in revocation or amendment to our patents, which potentially could result in our patents no longer protecting our genome-editing technologies or our product candidates. Such a loss of patent protection could have a material adverse impact on our business.

We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. There can be no assurance that we will have sufficient financial or other resources for such litigation or proceedings, which may continue for several years. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing or misappropriating or successfully challenging our intellectual property rights. In addition, if securities analysts or investors perceive litigation results to be negative, it could have a substantial adverse effect on the price of our common stock. There could be public announcements of the results of litigation or patent challenge hearings, motions, or other interim proceedings or developments, which also could affect the price of our stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. Any of the foregoing could allow third parties to develop and commercialize competing technologies and products and have a material adverse impact on our business, financial condition, results of operations, and prospects.

Our product candidates are biologics, and as such, we may enter into a settlement agreement with a biosimilar manufacturer seeking to market a product highly similar to our product; such a settlement agreement may be reviewed by the Federal Trade Commission, or FTC, and such review could result in a fine or penalty and substantial expense.

The FTC reviews patent settlement agreements between biologics companies and biosimilar manufacturers to evaluate whether these agreements include, among other things, anti-competitive reverse payments that slow or defeat the introduction of lower-priced medicines, including biosimilars. If we are faced with an FTC challenge of a settlement agreement with a biosimilar manufacturer, such challenge could impact how or whether we settle the case and, even if we strongly disagree with the FTC's position, we could face a penalty or fine and substantial expense. Any litigation settlements we enter into with biosimilar manufacturers could also be challenged by third parties adversely affected by the settlement. These kinds of follow-on lawsuits, which may be class action suits, can be expensive and can continue over multiple years. If we were to face lawsuits of this nature, we may not be successful in defeating these claims and we may, therefore, be subject to large payment obligations, which we may not be able to satisfy in whole or in part.

Our rights to develop and commercialize our product candidates are subject to the terms and conditions of our licenses and assignments with third parties, and if we fail to comply with our obligations under these agreements, we could lose intellectual property rights and be subject to litigation from our licensors or assignors.

We license, or have taken assignment to, patents related to certain of our product candidates and genome-editing technologies from third parties. These licenses and assignments typically impose obligations on us, including diligence and payment obligations. If we fail to comply with our obligations under these agreements, our licensors and assignors may have the right to terminate our agreements, in which event we would not be able to commercialize any product that is covered by the patent rights at issue. Additionally, we may be subject to litigation for breach of these agreements. Moreover, if disputes over intellectual property that we have licensed, or taken assignment of, prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the product candidates or technologies covered by such patents, which could have a material adverse effect on our business, financial conditions, results of operations, and prospects. In addition, intellectual property rights that we license in the future may include sublicenses under intellectual property owned by third parties, in some cases through multiple tiers. The actions of our licensors may therefore affect our rights to use our sublicensed intellectual property, even if we are in compliance with all of the obligations under our license agreements. Should our licensors or any of the upstream licensors fail to comply with their obligations under the agreements pursuant to which they obtain the rights that are sublicensed to us, or should such agreements be terminated or amended, our ability to develop and commercialize our product candidates may be materially harmed.

Our chRDNA genome-editing patent family was developed under a three-year research collaboration between us and Pioneer Hi-Bred International, Inc. (now Corteva Agriscience), or Pioneer. Initially, this patent family was owned by Pioneer under the terms of the Amended and Restated Collaboration and License Agreement dated July 13, 2015, with Pioneer (then a DuPont company), or the Pioneer Agreement, and Pioneer granted us an exclusive license to the chRDNA patent family in the fields of human and animal therapeutics and research tools as well as a non-exclusive license in certain other fields outside a Pioneer field which consists of certain agricultural crops, specified microorganisms, a defined industrial bio field, and certain nutrition and health applications, which Pioneer field is known as the Pioneer Exclusive Field. Through an amendment to the Pioneer Agreement, dated December 18, 2020, Pioneer assigned the chRDNA patent family to us in exchange for an upfront payment and potential future milestones. As part of this amendment, Pioneer also granted a covenant not to sue for our licensees of our chRDNA technology under certain other Pioneer intellectual property (to which we already have a license that, in this situation, we cannot sublicense to licensees of our chRDNA technology in the field of human therapeutics) that might cover our chRDNA genome-editing technology, provided that we make the required payments. Thus, if we do not make such payments, our licensees could be sued by Pioneer, which could result in our licensees suing us for breach of contract.

Additionally, under the Pioneer Agreement, we licensed certain Pioneer background CRISPR-Cas9 intellectual property, particularly a patent family owned by Vilnius University and exclusively licensed to Pioneer, that we have sublicensed to several third parties as part of our CRISPR-Cas9 out-licensing program. Although the Vilnius patent family does not cover our chRDNA genome-editing technology or product candidates, if we were to materially breach the Pioneer Agreement and not cure such breach, Pioneer could terminate the Pioneer Agreement, which would expose us to possible lawsuits from a number of our sublicensees to the Vilnius University patent family.

For our CB-011 product candidate, an allogeneic anti-BCMA CAR-T cell therapy, we took assignment of an anti-BCMA single-chain variable fragment, or scFv, from ProMab Biotechnologies, Inc., or ProMab, under a Sales and Assignment Agreement, dated January 31, 2020, or the ProMab Agreement, as amended. Although we own the patent family that covers this scFv and its methods of use, in the event that we materially breach, and do not cure, the ProMab Agreement, ProMab could terminate the agreement and we would be required to immediately cease any and all manufacture, sale, offer for sale, use, import, or export of products comprising the anti-BCMA scFv (provided that, if our product is approved for commercial sale, we may sell any remaining

existing inventory of such products for a short period of time). If this were to happen prior to regulatory approval, we would not be able to continue the development of CB-011, and if this were to happen after regulatory approval, we would lose all future revenues from CB-011.

The scFv in our CB-012 product candidate, an allogeneic anti-CD371 CAR-T cell therapy, is exclusively licensed to us in this field by Memorial Sloan Kettering Cancer Center, or MSKCC. To maintain the license, we are required to pay annual license fees and to meet certain diligence milestones within specified periods of time. We may extend these periods by a certain number of months upon payment of additional fees. In the event that we materially breach, and do not cure, the Exclusive License Agreement we entered into with MSKCC on November 13, 2020, or the MSKCC Agreement, MSKCC may terminate the MSKCC Agreement, in which case we would not be able to continue the development of CB-012.

Thus, we are reliant upon the above licenses to and assignments of certain intellectual property from third parties that is important or necessary to the development of our genome-editing technologies and product candidates. In spite of our best efforts, our licensors or assignors might conclude that we have materially breached our license or assignment agreements, respectively, and might terminate these agreements, thereby removing our ability to develop and commercialize products and technology covered by the agreements. To the extent such third parties fail to meet their obligations under these agreements, which we are not in control of, we may lose the benefits of the agreements. If these agreements are terminated, or if the underlying patents fail to provide the intended exclusivity, competitors could have the freedom to seek regulatory approval of, and to market, products identical to ours. Any of these events could have a material adverse effect on our competitive position, business, financial condition, results of operations, and prospects.

Disputes may arise with the third parties from whom we license or take assignment of our intellectual property rights from for a variety of reasons, including:

- the scope of rights granted under the license or assignment agreement and other interpretation-related issues;
- the extent to which our technology and processes infringe on, or derive from, intellectual property of the licensor that is not subject to the license or assignment agreement and is not covered by a covenant not to sue;
- the sublicensing of rights and the obligations to our licensors associated with sublicensing;
- our diligence obligations under license or assignment agreements and what activities satisfy those diligence obligations; and
- whether payments are due and when.

We may not be successful in obtaining or maintaining necessary rights to any future product candidates that we acquire through acquisitions or in-licenses.

Our future programs may involve additional product candidates that may require the use of intellectual rights held by third parties, and the growth of our business could depend, at least in part, on our ability to acquire or in-license these proprietary rights. We may be unable to acquire or in-license 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 other product candidates. We may need to cease development of a future product candidate covered by such third-party intellectual property rights.

The licensing and acquisition of third-party intellectual property rights is a competitive area, and companies that 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 develop 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. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates or new genome-editing or other technologies that we may seek to acquire. If we are unable to successfully obtain rights to required third party intellectual property rights, we may not be able to expand our product pipeline, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Our ability to continue to receive licensing revenues and to enter into new licensing arrangements related to the CRISPR-Cas9 CVC IP will be substantially impaired if the CVC IP is limited by administrative patent proceedings.

We have an exclusive license from The Regents of the University of California, or UC, and the University of Vienna, or Vienna, in all fields to a foundational CRISPR-Cas9 genome-editing patent family, the CVC IP, having as inventors Drs. Jennifer A. Doudna, Emmanuelle Charpentier, Martin Jinek, and Krzysztof Chylinski. We have entered into over 20 sublicenses, both exclusive and non-exclusive, to this CRISPR-Cas9 intellectual property in combination with licenses to our own Cas9 intellectual property (and sometimes in combination with a sublicense to the Vilnius Cas9 patent family we licensed from Pioneer) in a variety of fields (*e.g.*, human cell therapy, microbial applications, agriculture, livestock, industrial biotechnology, nutrition and health, research reagents and services, forestry, transgenic animal models, internal research, etc.). Under the Exclusive License for Methods and Compositions for RNA-Directed Target DNA Modification and for RNA-Directed Modulation of Transcription we entered into with UC and Vienna on April 16, 2013, or the UC/Vienna Agreement, we are required to perform certain diligence activities, all but one of which we have timely achieved. We are currently in negotiations with UC/Vienna to extend the time period in which we must achieve this last milestone. We are also required to share with UC/Vienna a percentage of sublicensing revenue we receive including cash and equity. These sublicense agreements are an important source of revenues for us while we are developing our own product candidates. Furthermore, we must reimburse UC/Vienna for the patent prosecution and maintenance costs associated with the CVC IP, which are substantial in light of all the disputes outlined below.

The CVC IP that we have exclusively licensed from UC/Vienna is co-owned with Dr. Charpentier, and Dr. Charpentier has not granted us any rights to the CVC IP, either directly or indirectly. On December 15, 2016, we entered into a Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement, or IMA, with UC, Vienna, Dr. Charpentier, CRISPR Therapeutics AG (the exclusive licensee of Dr. Charpentier in the field of human therapeutics), ERS Genomics Ltd (the exclusive licensee of Dr. Charpentier in all fields outside human therapeutics), and Intellia, our exclusive licensee in a defined field of human therapeutics. Under the IMA, the co-owners provided reciprocal worldwide cross-consents to each of the other co-owners' existing licensees and sublicensees as well as future licensees and sublicensees, with no accounting to the other owners. The IMA includes a number of other commitments and obligations with respect to supporting and managing the CVC IP, including a cost-sharing agreement. In the United States, each co-owner has the freedom to license and exploit the technology. As a result, although our license from UC/Vienna is exclusive, we do not have any rights from Dr. Charpentier and thus our license to the CVC IP from UC/Vienna is non-exclusive with respect to such co-owned rights. Furthermore, in the United States, each co-owner is required to be joined as a party to any claim or action we may wish to bring to enforce those patent rights. Although we have entered into the IMA, which provides for, among other things, notice of and coordination in the event of third-party infringement of the patent rights within the CVC IP, there can be no assurance that all parties will cooperate in any future infringement. In addition, the parties to the IMA may dispute certain provisions and the resolution of any contract interpretation disagreement could increase what we believe to be our financial obligations to UC/Vienna.

The CVC IP is, and has been, the source of several disputes in the USPTO, the EPO, and other patent offices. At the time the CVC IP was first filed (May 25, 2012), the United States was under a first-to-invent patent system; thus, if two or more patent applications or one or more patents and one or more patent applications

claimed the same invention, the USPTO would determine the inventorship. Specifically, the Broad Institute Inc. and Massachusetts Institute of Technology and, in some instances, the President and Fellows of Harvard College, which we refer to individually and collectively as the Broad, owns a patent family (having an earliest filing date of December 12, 2012) that includes issued patents in the United States and Europe that claim certain aspects of CRISPR-Cas9 systems to edit DNA in eukaryotic (*i.e.*, plant and animal) cells, including human cells. In January 2016, the Patent Trial and Appeal Board, or PTAB, of the USPTO declared an interference (Interference No. 106,048, or the ’048 interference) between one of the then-pending U.S. patent applications (now U.S. Patent No. 10,266,850) included in the CVC IP and 12 issued U.S. patents owned jointly by the Broad to determine which set of inventors invented first and, thus, was entitled to patents on the invention in the United States. The PTAB concluded at the end of the motions phase that the declared interference should be discontinued (and not progress to the priority phase) because the involved claim sets were considered patentably distinct from each other. Following appeal by the CVC group, in September 2018, the U.S. Court of Appeals for the Federal Circuit, or CAFC, affirmed the PTAB’s decision to terminate the interference proceeding without determining which inventors actually invented the use of the CRISPR-Cas9 genome-editing technology in eukaryotic cells. In June 2019, the PTAB declared another interference (Interference No. 106,115, or the ’115 interference) between 14 pending U.S. patent applications in the CVC IP and 13 patents and a patent application co-owned by the Broad. The Broad patents include those that were the subject of the ’048 interference. In September 2020, the PTAB issued an order that, among other matters, advanced the proceeding to the priority phase, where the CVC group has the burden of proof to show that it was first to invent. The priority phase is nearly complete and we expect the PTAB to schedule a hearing and issue a decision in 2021. The PTAB’s decision may be appealed to the CAFC.

In addition to the Broad, ToolGen, Inc., MilliporeSigma (a subsidiary of Merck KGaA), and Harvard University, each filed patent applications claiming CRISPR-Cas9-related inventions after the CVC IP was first filed (October 23, 2012 in the case of ToolGen patent family; December 6, 2012 in the case of the MilliporeSigma patent family; and December 17, 2012 in the case of the Harvard University patent family) and have alleged (or may allege) that they invented one or more of the inventions claimed in the CVC IP before the CVC inventors did. If the USPTO deems the scope of the claims of one or more of these parties to sufficiently overlap with the allowable claims from the CVC IP, the PTAB may declare additional interference proceedings to determine the actual inventor of such claims. In December 2020, the PTAB declared an interference (Interference No. 106,127, or the ’127 interference) between a ToolGen patent application that claims certain aspects of CRISPR-Cas9 systems to edit DNA in eukaryotic cells, including human cells, and the same 14 pending U.S. patent applications in the CVC IP that are involved in the ’115 interference. This interference is currently in the motions phase. Additionally, the PTAB declared an interference (Interference No. 106,126) at the same time between the same ToolGen patent application and the Broad patents and patent application in the ’115 interference. In June 2021, the PTAB declared an interference (Interference No. 106, 132) between a MilliporeSigma patent application that claims methods for using CRISPR-Cas9 systems to edit DNA in eukaryotic cells, including human cells, and the same 14 pending U.S. applications in the CVC IP that are involved in the ‘115 and ‘127 interferences. Also in June 2021, the PTAB declared an interference (Interference No. 106,133) between the same MilliporeSigma patent application and the Broad patents and patent applications in the ‘115 and ‘126 interferences. Opposition proceedings in the EPO have been initiated against patents owned by the Broad, ToolGen, and MilliporeSigma, and various third parties have opposed the three issued CVC European patents. Opposition proceedings can lead to the revocation of a patent in its entirety, the maintenance of the patent as issued, or the maintenance of a patent in amended form, and opposition proceedings and appeals therefrom typically take years to resolve. These CRISPR-Cas9 patents are expected to expire in 2033.

In light of the uncertainty surrounding the CVC IP, certain third parties have negotiated royalty-stacking provisions in their sublicenses with us whereby they can deduct from what they owe to us a certain percentage of royalties they pay to other parties with CRISPR-Cas9 patents (such as to the Broad). Furthermore, other third parties have adopted a “wait and see” approach and are not entering into license agreements with us or third parties until all of the uncertainty surrounding inventorship and priority among the groups with CRISPR-Cas9 patents is resolved. In the event that patents in the CVC IP are invalidated, certain of our sublicensees may wish to renegotiate their license agreements with us, or may terminate for convenience. If this happens prior to commercialization of our own product candidates, we could lose a source of revenues while still remaining responsible for reimbursing UC for costs of prosecuting and maintaining the remaining CVC IP.

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

In addition to seeking patents for some of our technology and product candidates, we also rely on trade secrets 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 and know-how can be difficult to protect.

We seek to protect these trade secrets and other proprietary technology, in part, by entering into non-disclosure or confidentiality agreements with parties who have access to them, such as our employees, collaborators, CMOs, CROs, clinical trial site personnel and investigators, consultants, and other third parties. We also enter into confidentiality and invention assignment agreements with our employees and our agreements with consultants include invention assignment obligations. We seek to preserve the integrity and confidentiality of our data, know-how, and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. Although we have confidence in these individuals, organizations, and systems, agreements or security measures may be breached, and we may not have adequate remedies for such breaches. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. We cannot guarantee that our trade secrets and other proprietary and confidential information will not be disclosed or that competitors will not otherwise gain access to our trade secrets.

Despite these efforts, any of these parties may breach agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, some courts both within and outside the United States may be less willing or unwilling to protect proprietary information and trade secrets. If a competitor lawfully obtains or independently develops any of our trade secrets, we will have no right to prevent such competitor from using such information to compete with us, which could harm our competitive position. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, or misappropriation of our intellectual property by third parties, we may not be able to establish or maintain a competitive advantage in our markets, which could materially adversely affect our business, operating results, financial condition, and prospects. Additionally, it is possible that our genome-editing technology platform, our trade secrets, and our know-how will over time be disseminated within the industry through the publication of journal articles and the movement of personnel from our company into academia or into other companies that may be our competitors.

Furthermore, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position would be materially and adversely harmed.

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

The degree of future protection afforded by our intellectual property rights, whether through patents or trade secrets, is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make, use, and sell cell therapy products that are similar to our product candidates without infringing our intellectual property rights;

- others may independently develop similar or alternative genome-editing technologies without infringing our intellectual property rights;
- we may not develop additional proprietary technologies that are patentable;
- others may misappropriate our trade secrets, or independently develop or acquire our trade secrets lawfully; and
- our patents may have expired, whether or not patent term extension was granted.

Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations, and prospects.

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

If our trademarks are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected. Our unregistered trademarks may be challenged, infringed, circumvented, declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our unregistered trademarks. Over the long term, if we are unable to successfully register our trademarks and establish name recognition based on our trademarks, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, domain names, copyrights, or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely impact our business, financial condition, results of operations, and prospects.

Risks Relating to Our Relationships with Third Parties

We rely on third parties to supply the materials for, and the manufacturing of, our clinical supplies, and we may continue our reliance on third parties for manufacturing of our commercial products, if approved.

We currently do not have clinical-scale manufacturing capabilities, nor do we have any immediate plans to develop such capabilities; thus, we must rely on third-party contract manufacturing organizations, or CMOs, to manufacture clinical supplies for our product candidates. We currently rely on five different CMOs to supply materials to an additional CMO who manufactures the necessary CB-010 cell therapy product candidate materials for our ANTLER phase 1 clinical trial and we are engaging multiple suppliers and CMOs, and anticipate that we will need to engage additional suppliers and CMOs, for our clinical trials with our CB-011 and CB-012 product candidates as well.

We receive the chRDNA guides used for genome editing from one CMO, the Cas protein (Cas9 in the case of CB-010) from another CMO, the virus used to insert the CAR into the T cell genome from another CMO located outside the United States, and our healthy donor cells from two different sources owned by the same third party supplier. The virus CMO receives plasmid from another supplier used in the manufacture of the viral material. Another CMO uses all of these materials to manufacture the CAR-T products for our CB-010 clinical trial. Coordination is essential to ensure that the various materials are received by the CMO manufacturing the T cell products in time, and in the correct amounts, for manufacturing runs. The manufactured CAR-T products then undergo a series of release testing. There can be no assurance that we will not experience supply or manufacturing issues in the future; particularly, given our reliance on single-source suppliers, some of which are

small companies with limited resources and experience to support clinical, and ultimately commercial, products. We cannot ensure 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 purposes. 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 or CMO. The time and effort to qualify a new supplier or CMO, 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. Furthermore, 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, financial condition, results of operations, and prospects.

If our CMOs and suppliers cannot successfully manufacture materials that conform to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, they will not be able to secure or maintain regulatory approval for their manufacturing facilities. In addition, we have no direct control over the ability of our CMOs and suppliers to maintain adequate quality control, quality assurance, and corresponding maintenance of records and documents, or to hire and retain trained personnel. If the FDA or a foreign regulatory authority inspects these third-party facilities for compliance with regulations for the manufacture of materials or product candidates and, if these facilities fail inspection and cannot adequately correct deficiencies, we may need to find alternative CMOs, which would significantly impact our ability to develop and obtain regulatory approval for our product candidates, and if approved, to market our products. In addition, if our CMOs and suppliers are unable to timely perform or have operations temporarily halted as a result of inspection or enforcement actions taken by the FDA or other regulatory authorities, or as a result of the COVID-19 pandemic, we may experience manufacturing delays or delays in receiving healthy donor cells used in manufacturing our CB-010 product candidate or may need to find alternative CMOs or suppliers, which in each case would significantly impact our ability to develop, obtain regulatory approval for, and market our product candidates, if approved.

We do not yet have sufficient information to reliably estimate the cost of the commercial manufacturing 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. Our product candidates have not been manufactured at commercial scale, may not be able to achieve commercial manufacturing, and we may be unable to create a product inventory necessary to satisfy demands for any of our product candidates following approval. As a result, we may never be able to develop a commercially viable product.

In addition, our current reliance on a limited number of CMOs and suppliers exposes us to a variety of risks, each of which could delay our preclinical studies, clinical trials, the approval, if any, of our product candidates by the FDA or foreign regulatory authorities, or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenue. Such risks include:

- our CMOs and suppliers may be unable to timely manufacture our product candidates or produce the quantity and quality required to meet our preclinical, clinical, and commercial needs, if any;
- our CMOs and suppliers may not be able to execute our manufacturing procedures appropriately;
- our CMOs and suppliers have their own proprietary methods, which we may not have access to in the event we wish to, or are required to, switch CMOs or suppliers. Additionally, we may not own, or may have to share, the intellectual property rights to any improvements made by our CMOs in the manufacturing process for our product candidates;
- our CMOs and suppliers may not perform as agreed or may not remain in business for the time required to supply our clinical trials or to successfully manufacture, store, and distribute our commercial products;
- our CMOs and suppliers could breach or terminate their agreements with us;

- we face competition for supplies from other gene and cell therapy companies, which may make it difficult for us to secure materials or the testing of such materials on commercially reasonable terms or in a timely manner;
- our CMOs may fail to adequately store the various components received from our suppliers and any damage or loss of such materials could materially impact our ability to manufacture and supply our product candidates;
- we rely on third parties to perform release tests on our product candidates prior to delivery to clinical trial sites. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm;
- we may be unable to identify additional CMOs or suppliers on acceptable terms or at all because the number of potential manufacturers is limited and the FDA or foreign regulatory authorities may have questions regarding any replacement CMO or supplier. This may require new testing and regulatory interactions. In addition, a new CMO would have to be educated in, or develop substantially equivalent processes for, production of our product candidates; and
- as a result of the current COVID-19 pandemic, our CMOs and suppliers may experience production delays and shutdowns.

Our CMO that supplies the virus we use to insert the CAR into our CB-010 CAR-T product candidate is located outside the United States. To date, our virus CMO has not been audited by the FDA, but it has received the cGMP certification for the manufacture of recombinant viral vectors from an EU national regulatory authority. There are additional risks with using an ex-U.S. vendor, including:

- economic weakness, including inflation, or political instability in particular non-U.S. economies and markets;
- difficulties in compliance with non-U.S. laws and regulations;
- changes in non-U.S. regulations and customs, tariffs, and trade barriers;
- changes in non-U.S. currency exchange rates and currency controls;
- trade protection measures, import, or export licensing requirements, or other restrictive actions by U.S. or non-U.S. governments;
- negative consequences from changes in tax laws;
- difficulties in managing international logistics and transportation; and
- workforce uncertainty in countries where labor unrest is more common than in the United States.

For our allogeneic CAR-T product candidates, we rely on receiving healthy donor material to manufacture our product candidates. Variation in quality of donor T cells, and potential challenges in procuring appropriate donor material, could result in insufficient product supply or may result in us being unable to initiate or continue clinical trials on the timelines we expect.

Unlike autologous CAR-T companies, we are reliant on receiving healthy donor material to manufacture our product candidates. Healthy donor T cells vary in quality, and this variation requires us to release batches with the highest integrity based on specifications confirmed by regulatory authorities which makes producing standardized product candidates more likely, but this step may slow the development and commercialization

pathway of those product candidates if releasable batches are not identified sufficiently rapidly. We and our CMOs 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 develop new testing methods and update our specifications for new risks, such as screening 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 of donor T cells, there may be insufficient material or we may be unable to initiate or continue clinical trials on the timelines we expect, which could harm our reputation and adversely impact our business and prospects. In addition, some third-party suppliers have in the past been unable to secure donor material during the COVID-19 pandemic due to government restrictions on activity and travel, while others were able to provide material. While our suppliers are currently able to provide us with donor material, if the COVID-19 pandemic worsens and our suppliers are unable to secure donor material, we may no longer have sufficient donor material to manufacture our product candidates.

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, on CROs, clinical trial sites and clinical trial principle investigators, contract laboratories, and other third parties to conduct our ANTLER phase 1 clinical trial for our CB-010 product candidate and future clinical trials for our other product candidates. 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 the protocol and applicable legal, regulatory, and scientific standards and regulations, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with current good clinical practices, or cGCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for the conduct of clinical trials on product candidates in clinical development. Regulatory authorities enforce cGCPs through periodic inspections and for-cause inspections of clinical trial principal investigators and trial sites. If we or any of these third parties fail to comply with applicable cGCP regulations or the protocol, or fail to enroll a sufficient number of patients, we may be required to conduct additional clinical trials to support our marketing applications, which would delay the regulatory approval process. Moreover, our business may be implicated if any of these third parties violates federal, state, or foreign fraud and abuse or false claims laws and regulations or healthcare privacy and security laws, or provide us or government agencies with inaccurate, misleading, or incomplete data.

Although we intend to design the clinical trials for our product candidates, our CROs will facilitate and monitor our clinical trials. As a result, many important aspects of our clinical development programs, including site and investigator selection, and the conduct and timing and monitoring of the study, will be partly or completely outside our direct control. Our reliance on third parties to conduct clinical trials will also result in less direct control over the collection, management, and quality of data developed through clinical trials than would be the case if we were relying entirely upon our own employees. Communicating with third parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities.

Any third parties conducting our clinical trials are not, and will not be, our employees and, except for remedies available to us under our agreements with such third parties, we cannot control whether 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 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 if there are other difficulties with such third parties, such as staffing difficulties, changes in priorities, or financial distress, our clinical trials may be extended, delayed, or

terminated. As a result, 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 timely enter into arrangements with alternative trial sites or CROs, or do so on commercially reasonable terms. Switching or adding clinical trial sites or CROs to conduct our clinical trials involves substantial cost and requires extensive management time, training, and focus. In addition, there is a natural transition lag when a new third party must learn about our product candidates and protocols, which can result in delays that may materially impact our ability to meet our desired clinical development timelines.

We also are required to register certain ongoing clinical trials and post the results of completed clinical trials on a U.S. government-sponsored database, *www.ClinicalTrials.gov*, within certain timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions. Our ANTLER phase 1 clinical trial for our CB-010 product candidate is posted on *www.ClinicalTrials.gov*. For any violations of laws and regulations during the conduct of our preclinical studies and clinical trials, we could be subject to warning letters or enforcement action that may include civil penalties up to and including criminal prosecution.

We may not be able to meet our obligations under the AbbVie collaboration or our own product candidates and pipeline may be delayed in light of our obligations to AbbVie. In addition, we have limited control over the achievement of milestones by AbbVie.

We recently entered into a multi-year collaboration agreement under which we will utilize our Cas12a chRDNA genome-editing and cell therapy technologies to research and develop two new CAR-T cell therapies directed to targets specified by AbbVie. We are responsible for conducting certain preclinical research, development, and manufacturing activities, including assisting in the manufacturing of all phase 1 clinical materials and assisting AbbVie with the preparation and filing of its INDs. We and AbbVie have developed a detailed research plan and budget for the first of the two program slots. The collaboration will involve a substantial number of our employees and resources, although we will be reimbursed by AbbVie for our work on the collaboration. We have not previously undertaken a collaboration of this magnitude and focus. Although we have begun a hiring effort to increase our research and development group, it is not certain that we will be able to rapidly hire new, qualified employees, in which case the work on our pipeline products may be delayed until we are able to increase our staff such that we can meet our obligations under the AbbVie research plan and continue to develop our own product candidates. In addition, our ability to receive significant milestone payments upon AbbVie's achievement of developmental, regulatory, and sales-based milestones is outside our control and is dependent on AbbVie's commercially reasonable efforts to develop, commercialize, and manufacture the licensed collaboration products.

We may form or seek collaborations or strategic alliances in the future for the development and commercialization of one or more of our product candidates or for new product candidates. We may not be successful in such efforts and, even if we do enter into such collaborations, they may not be successful.

Our product candidate development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. To date, we have not partnered with a third party with respect to any of our product candidates. In the future, we may choose to partner one or more of our product candidates. If we are unable to negotiate and enter into partnerships, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market, if approved, and generate product revenue.

If we decide to collaborate with pharmaceutical or biotechnology companies for the development and potential commercialization of any of our product candidates, or new product candidates, we may not be able to negotiate collaborations for such product candidates on a timely basis, on acceptable terms, or at all. We may also be restricted under existing agreements from entering into future collaborations. Collaborations are complex and time-consuming to negotiate and document. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the potential collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the potential collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by FDA or comparable regulatory authorities outside the United States, the potential market for the subject product candidate or candidates, the costs and complexities of manufacturing and delivering such product candidates to patients, the potential of competing biologics or other therapeutic approaches, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The potential collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than one with us for our product candidate or for a new product candidate. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. Thus, we may face significant competition in seeking appropriate collaborators.

Furthermore, the terms of any collaborations or other arrangements that we may establish may not be favorable to us. Even if we are able to enter into a collaboration, the following are some of the risks associated with doing so:

- collaborators have significant discretion in determining the efforts and resources that they will apply to collaborations and may not devote sufficient resources to the development, manufacturing, marketing, or sale of collaboration products;
- collaborators may not pursue development and commercialization of any product candidates we may develop or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborator's strategic focus or available funding, or external factors such as an acquisition that diverts resources or creates competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials, or require further development of a product candidate for clinical testing;
- collaborators may adopt alternative technologies, which could decrease the marketability of our product candidates and genome-editing technologies;
- collaborators may independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours, that may result in the withdrawal of the collaborator support for our collaboration product candidates;
- collaborators with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of our product candidates;
- collaborators may not properly obtain, maintain, enforce, or defend our intellectual property in the event we grant such rights or may use our intellectual property in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or expose us to potential litigation;

- we may lose certain valuable rights under circumstances identified in our collaborations, including if we undergo a change of control;
- disputes may arise between our collaborator and us that may cause the collaborator to act in a manner adverse to us and could result in the delay or termination of the research, development, or commercialization of our product candidates or that result in costly litigation or arbitration that diverts our management's attention and resources;
- collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner, if at all. For example, if a collaborator were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program under such collaboration could be delayed, diminished, or terminated; and
- collaboration agreements may be terminated and, if terminated, we may find it more difficult to find a suitable replacement collaborator or attract new collaborators, resulting in a need for additional capital to pursue further development or commercialization of the applicable product candidates we may develop.

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

We evaluate various strategic transactions on an ongoing basis. We may acquire other businesses, products or product candidates, intellectual property, or technologies as well as pursue joint ventures or investments in complementary businesses. The success of any future strategic transaction depends on the risks and uncertainties, 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's 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.

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.

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 could also incur losses resulting from undiscovered liabilities that are not covered by the indemnification we may obtain from the seller.

If we in-license product candidates or 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. We cannot be certain that, following a strategic transaction or license, we will achieve the results, revenue, or specific net income that justifies the transaction. 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 may be subject to claims that our employees, consultants, or third parties performing services for us have wrongfully used or disclosed confidential information of third parties.

Many of our employees were previously, and our consultants are or were previously, employed at universities or research institutions, or at other biotechnology or pharmaceutical companies. Although we try to ensure that our employees, consultants, and third parties performing services for us do not use the proprietary information or know-how of former employers or other companies in their work for us, we may be subject to claims that we or these individuals have used or disclosed confidential information or intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer or other third party. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to our management and employees.

Risks Relating to Employee Matters, Managing Growth, and Other Risks Relating to Our Business

Our future success depends on our ability to retain key executive officers and to attract, retain, and motivate qualified personnel.

We are highly dependent on the research and development, clinical, operational, legal, financial, and other business expertise of our executive officers, including Rachel E. Haurwitz, Ph.D., our President and Chief Executive Officer; Steven B. Kanner, Ph.D., our Chief Scientific Officer; Barbara G. McClung, J.D., our Chief Legal Officer and Corporate Secretary; and Jason V. O'Byrne, M.B.A., our Chief Financial Officer; as well as other members of our senior leadership team and our scientists. Certain of our scientists have greatly contributed to our intellectual property and are critical as we move our chRDNA technology platform forward. Although we have entered into employment agreements with all of our executive officers, each of them may terminate their employment with us at any time. All of our employees are "at will," which means that any of our employees could leave our employment at any time, with or without notice. We maintain "key person" insurance for Dr. Haurwitz but the amount of insurance is modest. We do not maintain "key person" insurance for any of our other executive officers or employees.

We conduct substantially all of our operations at our facility in Berkeley, California. The San Francisco Bay Area is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our industry is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms, if at all. Many of the biotechnology companies and research institutions that we compete against for qualified personnel and consultants have greater financial and other resources, different risk profiles, and a longer history in the industry than we do. Recruiting and retaining qualified research, development, manufacturing, regulatory, and clinical personnel is critical to our success. Our success also depends on our ability to continue to attract, retain, and motivate entry-level, mid-level, and senior scientific personnel as well as managers. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies, as well as academic and research institutions, for similar personnel. If we are unable to continue to attract and retain high-quality personnel and consultants, the rate and success at which we can discover and develop product candidates and operate our business will be limited.

To induce employees to remain at our company, in addition to salary and cash incentives, we have provided stock options that vest over time. The value to employees of stock options 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.

In addition, we rely on consultants and advisors, including our co-founders and scientific advisory board, or SAB, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors, including Drs. Jennifer A. Doudna and Martin Jinek who are among our founders and who are pioneers in CRISPR genome-editing technology, are not employed by us, may be employed by employers other than us, and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us.

The inability to recruit or retain certain executive officers, key employees, consultants, or advisors may impede the progress of our research, development, and commercialization objectives and have a material adverse effect on our business, intellectual property, financial condition, results of operations, and prospects.

We will need to develop and expand our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.

As of July 12, 2021 we had 76 full-time employees, and we expect to continue to increase our number of employees and the scope of our operations in 2021 and beyond as we seek to advance development, and if successful, commercialization, of our product candidates. To manage our anticipated development and expansion, we must continue to implement and improve our managerial, operational, and financial systems; expand our facilities; and continue to recruit and train additional qualified personnel. Current and future growth imposes significant added responsibilities on members of management, including:

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

Also, our management may need to divert a disproportionate amount of its attention away from their day-to-day activities and devote a substantial amount of time to managing these expansion activities. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees, and reduced productivity among our remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of our product candidates. If our management is unable to effectively manage this expected expansion, our expenses may increase more than expected, our ability to generate or increase our revenue could be reduced, and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our product candidates, if approved, and compete effectively will depend, in part, on our ability to effectively manage the future development and expansion of our company.

Our internal computer systems, or those of our third-party vendors, collaborators, consultants, or third parties performing services for us, may fail or suffer security breaches, which could result in a material disruption of the development of our product candidates and program research, compromise sensitive information related to our business, or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business.

Our internal computer systems and those of our current and any future third-party vendors, collaborators, consultants, and third parties performing services for us, as well as our clinical sites and regulatory authorities, are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, 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.

Although we have not experienced any such material system failure, accident, or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a disruption of our product candidate development and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of clinical trial data from our current or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to 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, our competitive position could be harmed, and the further development and commercialization of our product candidates could be delayed.

We could be subject to risks caused by misappropriation, misuse, leakage, falsification, or intentional or accidental release or loss of information maintained in the information systems and networks of our company, our third-party vendors, and clinical sites, including personal information of our employees and, potentially, our clinical study patients, and company and vendor confidential data. In addition, third parties may attempt to penetrate our systems or those of our vendors or fraudulently induce our personnel or the personnel of our vendors to disclose sensitive information in order to gain access to data and systems. We may experience threats to our data and systems, including malicious codes and viruses, phishing, and other cyber-attacks. The number and complexity of these threats continue to increase over time. If a material breach of our information technology systems or those of our vendors occurs, the market perception of the effectiveness of our security measures could be harmed and our reputation and credibility could be damaged. We could be required to expend significant amounts of money and other resources to repair or replace information systems or networks.

In addition, we could be subject to regulatory actions or claims made by individuals and groups in private litigation involving privacy issues related to data collection and use practices and other data privacy laws and regulations, including claims for misuse or inappropriate disclosure of data, as well as unfair or deceptive practices. Although we develop and maintain systems and controls designed to prevent these events from occurring, and we have a process to identify and mitigate threats, the development and maintenance of these systems, controls, and processes is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly sophisticated.

Moreover, despite our efforts, the possibility of these events occurring cannot be eliminated entirely. As we outsource more of our information systems to vendors, engage in more electronic transactions with clinical sites and collaborators, and rely more on cloud-based information systems, the related security risks will increase and we will need to expend additional resources to protect our technology and information systems. In addition, there can be no assurance that our internal information technology systems, or those of third parties with which we conduct business, will be sufficient to protect us against breakdowns, service disruption, data deterioration, or loss in the event of a system malfunction, or prevent data from being stolen or corrupted in the event of a cyberattack, security breach, industrial espionage attacks, or insider threat attacks, which could result in financial, legal, business, or reputational harm.

Our employees, clinical trial principal investigators, and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, clinical trial principal investigators, and consultants. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in other jurisdictions, to provide accurate information to the FDA and other regulatory authorities, to comply with healthcare fraud and abuse laws and regulations in the United States and in other jurisdictions, to report financial information or data accurately, or to disclose unauthorized activities to us. Such misconduct could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. 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. If we commercialize our products, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing, and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements.

We have adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent misconduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, financial condition, results of operations, and prospects, including the imposition of civil, criminal, and administrative penalties; damages; monetary fines' contractual damages; reputational harm; and curtailment of our operations, any of which could adversely affect our business, financial condition, results of operations, and prospects.

If we fail to comply with environmental, health, and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business; additionally, our business could be shut down until we are in compliance with such laws and regulations.

We are subject to numerous federal, state, and local environmental, health, and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment, and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We contract with third parties for the disposal of these materials and wastes. We will not be able to eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from any use by us of hazardous materials, we could be held liable for any resulting damages. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with such laws and regulations. In addition, we may incur substantial costs in order to comply with current or future environmental, health, and safety laws and regulations. These current or future laws and regulations may impair our product candidate development and research program efforts.

Moreover, there is increasing stakeholder pressure on companies to diligence environmental, social, and governance matters in the supply chain. Negative publicity regarding production methods, alleged practices, or workplace or related conditions of any of our suppliers, CMOs, CROs, or third parties who perform services for us could adversely affect our reputation and force us to locate alternatives, which could increase our costs and result in delayed supply of components for, and manufacturing of, our product candidates, or other disruptions to our operations.

Our insurance policies are expensive and only protect us from some business risks, which may leave us exposed to certain uninsured liabilities.

Although we have obtained product liability insurance coverage for our clinical trials, it may not be adequate to cover all expenses or liabilities that we may incur. Furthermore, we anticipate that we will need to increase our insurance coverage if we successfully commercialize any product candidate. Product insurance coverage is increasingly expensive, and we may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. Once, and if, we obtain marketing approval for a product candidate, we intend to acquire product liability insurance coverage for our commercial products; however, we may be unable to obtain such product liability insurance on commercially reasonable terms or in adequate amounts. Our insurance policies may also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. Additionally, 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. Many of our license agreements require us to indemnify our licensors or licensees against certain third-party claims; we may not have insurance for such indemnifications or our insurance may be inadequate should any claim arise.

We also expect that operating as a public company will make it more difficult and more expensive for us to maintain and increase our levels of directors' and officers' liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our cash position and results of operations. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees, or as executive officers.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any product candidates that we may develop.

We will face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if such product candidates receive marketing approval and are sold commercially. 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 claims that our product candidates caused injuries, we could incur substantial liabilities. Even a successful defense would require significant financial and management resources. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial patients;
- significant costs to defend the related litigation;
- initiation of investigations by regulators;
- diversion of our management's time and resources;
- substantial monetary awards to clinical trial patients;
- product recalls, withdrawals, or labeling, marketing, or promotional restrictions;

- exhaustion of any available insurance and our capital resources;
- loss of revenue;
- the inability to commercialize any product candidates that we may develop; and
- a decline in our stock price.

As a public company, we are obligated to develop and maintain proper and effective internal controls over financial reporting, and any failure to maintain the adequacy of these internal controls may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We will be required, pursuant to Section 404 of the Sarbanes-Oxley Act, to furnish a report by management on, among other things, the effectiveness of our internal controls over financial reporting for the fiscal year ending December 31, 2022, which is the year covered by the second annual report following the completion of our initial public offering. This assessment will need to include disclosure of any material weaknesses identified by our management in our internal controls over financial reporting. In addition, our independent registered public accounting firm will be required to attest to the effectiveness of our internal controls over financial reporting in our first annual report required to be filed with the SEC following the date we are no longer an emerging growth company if we are not a non-accelerated filer at such time.

If we are unable to conclude that our internal controls over our financial reporting are effective, or if our independent registered public accounting firm determines we have a material weakness in our internal controls over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, the market price of our common stock could decline, and we could be subject to sanctions or investigations by the SEC or other regulatory authorities. Failure to remedy any material weakness or significant deficiency in our internal controls over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

Our effective tax rate may fluctuate, and we may incur obligations in tax jurisdictions in excess of amounts accrued on our financial statements.

In addition to federal income tax, we are subject to taxation in various state and local tax jurisdictions. As a result, our effective tax rate is derived from a combination of applicable tax rates in the locations in which we operate. In preparing our financial statements, we estimate the amount of tax that will become payable in each jurisdiction using rates based on prior experience. Nevertheless, our effective tax rate may be different than what we have experienced in the past due to numerous factors, including the passage of new tax legislation, changes in the mix of our profitability, if any, from jurisdiction to jurisdiction, the results of examinations and audits of our tax filings, our inability to secure or sustain acceptable agreements with tax authorities, and changes in tax laws. Any of these factors could cause us to experience an effective tax rate significantly different from previous periods and may result in tax obligations in excess of amounts accrued in our financial statements.

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

We have generated, and expect to continue to generate in the future, significant federal and state net operating loss, or NOL, carryforwards that are available to offset taxable income in future years, if any. We have also generated, and expect to continue to generate in the future, significant federal and state research and development tax credit carryforwards that are available to potentially offset federal income taxes and state income taxes, respectively, in future years, if any.

Under the Tax Cuts and Jobs Act of 2017, or TCJA, as modified by the Coronavirus Aid, Relief and Economic Security Act, or the CARES Act, our federal NOLs incurred in taxable years beginning after

December 31, 2017 may be carried forward indefinitely. Additionally, for tax years beginning after December 31, 2020, the deductibility of federal NOLs incurred in taxable years beginning after December 31, 2017 is limited to 80% of our taxable income. Also, NOLs incurred in 2018, 2019, and 2020 may be carried back five taxable years. It is uncertain if and to what extent various states will conform to the NOL changes contained in the TCJA and the CARES Act. Federal research and development credit carryforwards may only be carried forward for 20 years and therefore could expire unused. As a result, they may be unavailable to offset future taxes.

In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, which we refer to as the Tax Code, and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50 percentage point change, by value, in its equity ownership by certain stockholders over a rolling three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes (such as research and development tax credits) to offset its post-change income or taxes may be limited. A Section 382 analysis was performed for the period June 1, 2012 through March 31, 2021, which concluded that we did not experience any "ownership change" during any rolling three-year period occurring within this period, and we have a full valuation allowance for deferred tax assets, including NOLs. However, the completion of this offering, together with private placements and other transactions that have occurred in the past 36 months, may trigger such an ownership change. Furthermore, we may experience one or more ownership changes in the future as a result of this offering and subsequent shifts in our stock ownership, some of which may be outside our control. In addition, at the state level, there may be periods during which the use of NOL carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California recently imposed limits on the use of California state NOLs and tax credits to offset California taxable income in years beginning after 2019 and before 2023. If an ownership change occurs and we earn taxable income in future years, the limitation on our ability to use our NOLs and other tax attribute carryforwards could adversely affect our future operating results by increasing our future income tax liabilities.

The COVID-19 pandemic may in the future adversely impact our business, financial condition, and results of operations, including our preclinical studies and clinical trials, and may cause substantial disruption in the financial markets and adversely impact economies worldwide.

Public health crises such as pandemics or other outbreaks could adversely impact our business. As a result of the COVID-19 pandemic, and any future pandemics, and governmental responses to such pandemics, we may in the future experience disruptions that could severely impact our business, preclinical studies, clinical trials, and commercialization activities, 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 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;
- requirements to change the ways in which our preclinical studies and clinical trials are conducted due to governmental regulations as part of a response to the COVID-19 pandemic, which may result in unexpected costs, delays, or discontinuation of our preclinical studies and clinical trials altogether;
- increased adverse events and deaths in our clinical trials due to COVID-19-related infections, which may result in increased complications due to immunosuppression 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;

- interruption or delays in the operations of the FDA and comparable foreign regulatory agencies and necessary interactions with such regulatory agencies due to limitations in employee resources, limitations on travel, forced furlough of government employees, or diversion of resources, which would impact review and approval timelines;

- interruption of, or delays in receiving, supplies of components for our product candidates from our suppliers, including the supply of healthy donor cells, and delays or suspension in manufacturing by our 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;

- 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; and

- significant disruptions and volatility in the financial markets.

State and local government responses to the COVID-19 pandemic have included “shelter in place,” “stay at home,” and similar types of orders. Beginning the week of March 16, 2020, the majority of our workforce began working from home. All of our lab workforce has returned to on-site work; however, our corporate and administrative personnel are still mostly working remotely. The effects of the stay-at-home orders and our work-from-home policies may negatively impact productivity, disrupt our business, and delay our regulatory and clinical timelines for our product candidates, 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 may take further actions that alter our operations as may be required by federal, state, or local authorities, or which we determine are in the best interests of our employees. The COVID-19 pandemic continues to evolve. The extent to which the COVID-19 pandemic may impact our business, research, preclinical studies and clinical trials, productivity of our employees, supply chains, and access to capital or business development activities will depend on future developments, which are highly uncertain and cannot be predicted with confidence. To the extent the COVID-19 pandemic adversely affects our business, financial condition, results of operations, and prospects, it may also have the effect of amplifying many of the other risks described in this “Risk Factors” section, such as those relating to the timing and results of our current and future clinical trials and our financing needs.

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 potential cybersecurity attacks, our operations, and those of our suppliers, CMOs, CROs, and clinical trial sites, could be subject to disruptions, including those caused by earthquakes, power shortages or outages, telecommunications failures, water shortages or outages, floods, hurricanes, typhoons, fires, extreme weather conditions, epidemics and pandemics, and other natural or man-made disasters or business interruptions. The occurrence of any of these business disruptions could seriously harm our business, financial condition, results of operations, and prospects, and increase our costs and expenses. Our ability to manufacture our product candidates could be disrupted if our operations or those of our suppliers, CMOs, CROs, or clinical trial sites are affected by a natural or man-made

disaster or other business interruption. Our corporate headquarters are located in California near major earthquake faults and fire zones. The ultimate impact on us 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 business, financial condition, results of operations, and prospects could suffer in the event of a major earthquake, fire, or other natural disaster. Furthermore, our preclinical work involves studies in mice. In the past, vivarium sites have been shut down by animal activists and any disturbance or shut down at sites where our preclinical work is being conducted could jeopardize our data and affect our product candidate timelines.

Furthermore, we interact with the FDA and other federal, state, and regulatory agencies, and lack of funding for such agencies or temporary shut-downs can affect our operations. 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, and has had to furlough critical government employees and stop critical activities. 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; 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. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions for our product candidates, which could have a material adverse effect on our business.

Unfavorable global economic conditions could adversely affect our business, financial condition, or results of operations.

Our results of operations could be adversely affected by general conditions in the global economy and in the global financial markets. A severe or prolonged economic downturn, or additional global financial crises, could result in a variety of risks to our business, including weakened demand for our product candidates, if approved, or our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers and CMOs, possibly resulting in supply or manufacturing disruption. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which such conditions could adversely impact our business.

Risks Relating to this Offering and Ownership of our Common Stock

We do not know whether a market will develop for our common stock or what the market price of our common stock will be and, as a result, it may be difficult for our stockholders to sell shares of our common stock.

Before this offering, there was no public trading market for our common stock. Although our common stock has been approved for listing on the Nasdaq Global Select Market, an active trading market for our shares may never develop or be sustained following this offering. If a market for our common stock does not develop or is not sustained, it may be difficult for holders of our common stock to sell shares of our common stock at an attractive price, if at all.

You will incur immediate and substantial dilution as a result of this offering.

If you purchase common stock in this offering, you will incur immediate and substantial dilution of $8.92 per share, representing the difference between the initial public offering price of $16.00 per share, and our pro forma net tangible book value per share after giving effect to this offering and the automatic conversion of all outstanding shares of our preferred stock upon the closing of this offering. Moreover, we have issued options in the past that allow the holders to acquire common stock at prices significantly below the initial public offering price. As of July 12, 2021, there were 5,080,046 shares subject to outstanding options with a weighted-average exercise price of $3.33 per share. To the extent that these outstanding options are ultimately exercised or the underwriters exercise their option to purchase additional shares, you will experience further dilution.

The market price of our common stock may be volatile, which could result in substantial losses for investors purchasing shares in this offering.

The initial public offering price for our common stock was determined through negotiations between us and the underwriters. The market price of our common stock following the offering may vary significantly from the initial public offering price. As a result, you may not be able to sell your common stock at or above the initial public offering price. Some of the factors that may cause the market price of our common stock to fluctuate include:

- the timing and results of preclinical and clinical studies for any product candidates that we develop;
- delay, failure, or discontinuation of any of our product candidates or research programs;
- results of preclinical studies, clinical trials, or regulatory approvals of product candidates of our competitors, or announcements about new research programs or product candidates of our competitors;
- adverse regulatory decisions, including failure to receive regulatory approval of one or more of our product candidates;
- unanticipated or serious safety concerns related to our product candidates;
- developments or changing views regarding the use of biologics, including those that involve genome editing;
- commencement or termination of collaborations;
- regulatory or legal developments in the United States and other countries;
- assertions that our product candidates infringe third-party patents;
- invalidity challenges to our intellectual property;
- manufacturing delays;
- acceptance or lack of acceptance of allogeneic products;
- inability to meet the obligations under our collaboration agreement with AbbVie;
- inability to obtain additional collaboration partners;
- the recruitment and retention of key personnel;
- the level of expenses related to any of our product candidates, including preclinical studies and clinical trials, as well as the level related to our research programs;
- the results of our efforts to develop additional product candidates or technologies;
- actual or anticipated changes in estimates as to financial results, development timelines, or recommendations by securities analysts;
- announcements or expectations of additional financing efforts;

- significant lawsuits, including contract disputes with our licensors, licensees, assignors, assignees, suppliers, CMOs, CROs, clinical sites, or stockholder litigation;
- sales of our common stock by us, our insiders, or other stockholders;
- expiration of market stand-off or lock-up agreements;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry, and market conditions; and
- the other factors described in this “Risk Factors” section.

In recent years, the stock market in general, and the market for pharmaceutical and biotechnology companies in particular, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to changes in the operating performance of the companies whose stock is experiencing those price and volume fluctuations, including recently in connection with the ongoing COVID-19 pandemic. Broad market and industry factors, including potentially worsening economic conditions and other adverse effects or developments, may seriously affect the market price of our common stock, regardless of our actual operating performance. These fluctuations may be even more pronounced in the trading market for our stock shortly following this offering. Following periods of such volatility in the market price of a company’s securities, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert our management’s attention and resources from our business.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline.

The trading market for our common stock will rely in part on the research and reports that industry or financial analysts publish about us or our business. We do not currently have, and may never obtain, research coverage by industry or financial analysts. If no or few analysts commence coverage of us, the trading price of our stock would likely decrease. Even if we do obtain analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

A significant portion of our total outstanding shares is, and will be, restricted from immediate resale following this offering, but may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. After this offering and after giving effect to the conversion of all outstanding shares of our preferred stock into 26,234,654 shares of our common stock upon the closing of this offering, we will have 56,709,191 shares of common stock outstanding, or 59,559,191 shares if the underwriters exercise their option to purchase additional shares in full, in each case based on the 37,709,191 shares of our common stock outstanding as of July 12, 2021. Of these shares, the 19,000,000 shares (or 21,850,000 shares if the underwriters exercise their option to purchase additional shares in full) we are selling in this offering may be resold in the public market immediately. The remaining 37,709,191

shares will be restricted under securities laws or as a result of lock-up (which may be waived, with or without notice, by BofA Securities, Inc., Citigroup Global Markets Inc., and SVB Leerink LLC at any time) or other agreements, but may be sold after this offering as described in the "Shares Eligible for Future Sale" section of this prospectus, unless held by one of our affiliates, in which case the resale of those securities will be subject to volume limitations and other restrictions under Rule 144 of the Securities Act. Moreover, after this offering, holders of an aggregate of 26,621,668 shares of our common stock will have rights, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders in the future. We also plan to register all shares of common stock that we may issue under our equity compensation plans or that are issuable upon exercise of outstanding options. Once we register these shares, they can be freely sold in the public market upon issuance and, once vested, subject to volume limitations applicable to our affiliates and the lock-up agreements described in the "Underwriting" section of this prospectus. If any of these additional shares are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

Insiders will continue to have substantial influence over us after this offering, which could limit your ability to affect the outcome of key transactions, including a change of control.

After this offering, our directors and executive officers and our stockholders who owned more than 5% of our outstanding common stock before this offering will beneficially own shares representing approximately 34% of our outstanding common stock (assuming no exercise of the underwriters' option to purchase an additional 2,850,000 shares of our common stock). As a result, these stockholders, if they choose to act together, will be able to influence our management and affairs and all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions.

Some of these persons or entities may have interests different than yours. For example, because many of these stockholders purchased their shares at prices substantially below the current market price of our common stock and have held their shares for a longer period, they may be more interested in selling our company to an acquirer than other investors, or they may want us to pursue strategies that deviate from the interests of other stockholders.

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

We are an "emerging growth company," as defined in the JOBS Act, and may remain an emerging growth company for up to five years following this offering. For as long as we remain an emerging growth company, we are permitted and plan to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board, or PCAOB, regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements, reduced disclosure obligations regarding executive compensation, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. As a result, the information we provide stockholders will be different than the information that is available with respect to some other public companies. In this prospectus, we have not included all of the executive compensation related information that would be required if we were not an emerging growth company. We cannot predict whether investors will find our common stock less attractive if we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock, and our stock price may be more volatile.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging

growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements and interim condensed consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

We will incur increased costs as a result of operating as a public company, and our management will be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, and particularly after we are no longer an "emerging growth company," we will incur significant legal, accounting, and other expenses that we did not incur as a private company. The Dodd-Frank Wall Street Reform and Consumer Protection Act, the Sarbanes-Oxley Act, the listing requirements of the Nasdaq Global Select Market, and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We expect that we will need to hire additional accounting, finance, legal, and other personnel in connection with our becoming, and our efforts to comply with the requirements of being, a public company, and our management and other personnel will need to devote a substantial amount of time towards maintaining compliance with these requirements. These requirements will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. In addition, we expect that the rules and regulations applicable to us as a public company may make it more difficult and more expensive for us to obtain directors' and officers' liability insurance, which could make it more difficult for us to attract and retain qualified members of our board of directors or executive officers.

After this offering, we will be subject to Section 404 of the Sarbanes-Oxley Act and the related rules of the SEC, which generally require our management and independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting. Beginning with the second annual report that we will be required to file with the SEC, Section 404 requires an annual management assessment of the effectiveness of our internal control over financial reporting. However, for so long as we remain an emerging growth company as defined in the JOBS Act, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not emerging growth companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404. Once we are no longer an emerging growth company or, if prior to such date, we opt to no longer take advantage of the applicable exemption, we will be required to include an opinion from our independent registered public accounting firm on the effectiveness of our internal control over financial reporting.

During the course of our review and testing, we may identify deficiencies and be unable to remediate them before we must provide the required reports. Furthermore, if we identify any material weaknesses, we may not detect errors on a timely basis and our financial statements may be materially misstated. We or our independent registered public accounting firm may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting, which could materially and adversely affect our business, financial condition, results of operations, and prospects; cause investors to lose confidence in our reported financial information; and cause the trading price of our stock to fall. In addition, as a public company we will be required to file accurate and timely quarterly and annual reports with the SEC under the Exchange Act. In order to report our results of operations and financial statements on an accurate and timely basis, we will depend in part on third parties to provide timely and accurate notice of their costs to us. Any failure to report our financial results on an accurate and timely basis could result in sanctions, lawsuits, delisting of our shares from the Nasdaq Global Select Market, or other adverse consequences that would materially and adversely affect our business, financial condition, results of operations, and prospects.

We will have broad discretion in the use of the net proceeds from this offering and may not use them effectively.

We cannot specify with certainty the particular uses of the net proceeds we will receive from this offering. Our management will have broad discretion in the application of the net proceeds, including for any of the purposes described in "Use of Proceeds." Accordingly, you will have to rely upon the judgment of our management with respect to the use of the proceeds, with only limited information concerning management's specific intentions. Our management may spend a portion or all of the net proceeds from this offering in ways that our stockholders may not desire or that may not yield a favorable return. The failure by our management to apply these funds effectively could harm our business, financial condition, results of operations, and prospects. Pending their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

Participation in this offering by our existing principal stockholders or their affiliated entities may reduce the public float for our common stock.

To the extent our existing principal stockholders or their affiliated entities participate in this offering, such purchases may reduce the non-affiliate public float of our shares, meaning the number of shares of our common stock that are not held by our executive officers, directors, and principal stockholders. A reduction in the public float could reduce the number of shares that are available to be traded at any given time, thereby adversely impacting the liquidity of our common stock and depressing the price at which you may be able to sell shares of common stock purchased in this offering.

We do not expect to pay any dividends for the foreseeable future. Investors in this offering may never obtain a return on their investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations. In addition, any future credit facility may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

Provisions in our amended and restated certificate of incorporation, our amended and restated bylaws, and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders, and may prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation, amended and restated bylaws, and Delaware law contain provisions that may have the effect of discouraging, delaying, or preventing a change in control of us or changes in our management that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. Our amended and restated certificate of incorporation and bylaws, which will become effective upon the closing of this offering, include provisions that:

- authorize "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend, and other rights superior to our common stock;
- create a classified board of directors whose members serve staggered three-year terms;
- specify that special meetings of our stockholders can be called only by our board of directors, the chair of our board, or our chief executive officer;
- prohibit stockholder action by written consent;

- establish an advance notice procedure for stockholder matters to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- provide that our directors may be removed only for cause;
- expressly authorized our board of directors to make, alter, amend, or repeal our amended and restated bylaws; and
- require supermajority votes of the holders of our common stock to amend our amended and restated bylaws and specified provisions of our amended and restated certificate of incorporation.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock.

In addition, because we are incorporated in the State of Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, or DGCL, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Any provision of our amended and restated certificate of incorporation, amended and restated bylaws, or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

As a California-domiciled public company, we will be required to have at least two or three women and at least one director from an underrepresented community on our board of directors by the end of 2021, depending on the size of our board at the time.

Our success depends in part on our continued ability to attract, retain, and motivate highly qualified individuals to our board of directors. As a public company headquartered in California, we will be required to have two or three women on our board of directors by the end of 2021, depending on the size of our board of directors at the time. We will be also required to have at least one director from an underrepresented community by the end of 2021 and to have two or three directors from an underrepresented community by the end of 2022, depending on the size of our board of directors at the time. While we currently have two women on our board of directors, recruiting and retaining board members carries uncertainty, and failure to comply with this California requirement could result in financial penalties.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, executive officers, or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative claim or action or proceeding brought on our behalf;

- any claim or action asserting a breach of fiduciary duty or aiding and abetting a breach of fiduciary duty;
- any claim or action against us arising under the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws; and
- any action asserting a claim against us that is governed by the internal-affairs doctrine.

This provision would not apply to suits brought to enforce a duty or liability created by the Securities Act of 1933, as amended, or the Securities Act, or the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Although the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving such action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

This exclusive forum provision may limit a stockholder’s ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, executive officers, or other employees, which may discourage lawsuits against us and our directors, executive officers, and other employees. If a court were to find the exclusive forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements. All statements other than statements of historical facts contained in this prospectus, including statements regarding our future results of operations and financial position, future revenue, business strategy, prospects, product candidates, planned and ongoing preclinical studies and clinical trials, results of preclinical studies and clinical trials, research and development costs, regulatory approvals, timing and likelihood of success, as well as plans and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential,” or “continue” or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements include, but are not limited to, statements concerning:

- the initiation, timing, progress and results of our product candidate preclinical studies, clinical trials, and research programs;
- our ability to demonstrate, and the timing of, preclinical proof-of-concept *in vivo* for our product candidates;
- our ability to successfully develop our product candidates and to obtain and maintain regulatory approval for our product candidates;
- our ability to successfully complete our clinical trials;
- our ability to quickly leverage our initial product candidates and to progress additional candidates;
- the prevalence of certain diseases and conditions we intend to treat and the size of the market opportunity for our product candidates;
- estimates of the number of patients with certain diseases and conditions we intend to treat and the number of patients that we will enroll in our clinical trials;
- the likelihood of our clinical trials demonstrating safety and efficacy of our product candidates;
- the beneficial characteristics, safety, efficacy, therapeutic effects, and potential advantages of our product candidates;
- the timing or likelihood of regulatory filings and approval for our product candidates;
- our ability to meet future regulatory standards with respect to our product candidates;
- our plans relating to the further development and manufacturing of our product candidates, including additional indications for which we may pursue;
- our ability to identify additional products, product candidates, or technologies with significant commercial potential that are consistent with our commercial objectives;
- the rate and degree of market acceptance and therapeutic benefits of our product candidates;
- the implementation of our strategic plans for our business, product candidates, research programs, and technologies;

- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and genome-editing technology;
- assertions that our product candidates infringe third-party patents;
- invalidity challenges to our intellectual property;
- the impact of COVID-19 on our business and operations;
- anticipated developments related to our competitors and our industry;
- our competitive position and ability to leverage the clinical, regulatory, and manufacturing advancements made by our genome-editing technologies to accelerate our clinical trials and regulatory approval of product candidates;
- the success of competing therapies that are or may become available;
- our ability to identify and enter into future license agreements and collaborations;
- the expected potential benefits of strategic collaborations with third parties and our ability to attract collaborators with development, regulatory, manufacturing, or commercialization expertise;
- our reliance on third parties to conduct clinical trials of our product candidates;
- our reliance on third parties for the manufacture of our product candidates;
- our plans relating to sales strategy, manufacturing and commercializing our product candidates;
- our ability to attract and retain sales personnel, or to contract with a sales organization, if our product candidates are approved;
- anticipated regulatory developments in the United States and foreign countries in which we may seek regulatory approval for our product candidates in the future;
- our ability to attract and retain key scientific and management personnel;
- our financial performance;
- the sufficiency of our existing capital resources to fund our future operating expenses and capital expenditure requirements;
- our expectations regarding the period during which we will qualify as an emerging growth company under the JOBS Act; and
- our anticipated use of our existing resources and the proceeds from this offering, estimates of our expenses, capital requirements, and needs for additional financing.

The forward-looking statements in this prospectus are only predictions and are based largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this prospectus and are subject to a number of known and unknown risks, uncertainties and assumptions, including those described under the sections in this prospectus entitled “Risk Factors” and “Management’s

Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in this prospectus. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in a very competitive and rapidly evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

INDUSTRY AND MARKET DATA

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations about our product candidates, market position, market opportunity, market size, and the incidence of certain medical conditions, is based on industry information and other third-party sources. Our estimates of the potential market opportunities for our product candidates include a number of key assumptions based on our industry knowledge and industry publications, which we believe to be reasonable. However, any projections, assumptions, and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to risks and uncertainties due to a variety of factors, including those described in “Risk Factors” and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by independent third parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately $278.9 million, (or approximately $321.3 million if the underwriters exercise their option to purchase 2,850,000 additional shares in full), after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We currently intend to use the net proceeds from this offering, together with our existing cash and cash equivalents, as follows:

- approximately $110.0 million to advance the clinical development of our CB-010 product candidate, including funding the ANTLER phase 1 clinical trial through initial data;
- approximately $95.0 million to fund IND-enabling activities and the potential initiation of clinical studies for our CB-011 and CB-012 product candidates;
- approximately $65.0 million to continue research and development of our iPSC-to-NK platform for solid tumor-targeted cell therapies, advancement of our genome-editing technologies, as well as discovery-stage research toward potential additional programs; and
- the remainder for working capital and other general corporate purposes, including the additional costs associated with being a public company.

Our first clinical trial, which is for our CB-010 product candidate, was opened at the end of 2020. The rest of our product candidates are currently in preclinical development. The specific allocation of the proceeds from this offering and our current cash and cash equivalents towards specific product candidates will depend on, among other things, results from our research and development efforts for each product candidate, the timing and success of our preclinical studies and the timing and outcome of regulatory submissions.

We expect the net proceeds from this offering, together with our existing cash and cash equivalents, will not be sufficient for us to advance any of our product candidates through regulatory approval, and we will need to raise additional capital to complete the development and potential commercialization of any of our product candidates.

We may also use a portion of the net proceeds to in-license, acquire, or invest in complementary technologies, assets, manufacturing capabilities, or intellectual property. We periodically evaluate strategic opportunities; however, we have no current commitments to enter into any such acquisitions or make any such investments.

Our expected use of net proceeds from this offering represents our current intentions based upon present plans and business conditions. As of the date of this prospectus, we cannot predict with complete certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the actual amounts that we will spend on the uses set forth above.

Based on our planned use of the net proceeds from this offering and our existing cash and cash equivalents, we estimate that such funds will be sufficient to enable us to fund our operating expenses, debt service, and capital expenditure requirements through at least the next 12 months from the date the interim condensed consolidated financial statements included elsewhere in this prospectus are available to be issued. We have based this estimate on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect.

We may find it necessary or advisable to use the net proceeds from this offering for other purposes, and we will have broad discretion in the application of the net proceeds. Pending the uses described above, we plan to invest the net proceeds from this offering in short-term, interest-bearing obligations, investment-grade instruments, certificates of deposit, or direct or guaranteed obligations of the U.S. government.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock and do not anticipate paying any cash dividends in the foreseeable future. We currently anticipate that we will retain all available funds for use in the operation and expansion of our business. Any future determination to pay dividends on our common stock will be made at the discretion of our board of directors and will depend upon, among other factors, our financial condition, results from operations, current and anticipated cash needs, plans for expansion, and other factors that our board of directors may deem relevant.

CAPITALIZATION

The following table summarizes our cash and cash equivalents and capitalization as of March 31, 2021:

- on an actual basis;
- on a pro forma basis, to reflect (i) the filing and effectiveness of our amended and restated certificate of incorporation in Delaware, which will be in effect immediately prior to the completion of this offering; and (ii) the automatic conversion of all outstanding shares of convertible preferred stock into an aggregate of 26,234,654 shares of our common stock immediately prior to the closing of this offering; and
- on a pro forma as adjusted basis, to reflect (i) the pro forma items described immediately above; and (ii) the sale and issuance by us of 19,000,000 shares of common stock in this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

You should read the information in this table together with the interim condensed consolidated financial statements and related notes to those statements included elsewhere in this prospectus, as well as the information set forth under the headings "Use of Proceeds," "Summary Consolidated Financial Data," and "Management's Discussion and Analysis of Financial Condition and Results of Operations." The pro forma and pro forma as adjusted information below is illustrative only and our capitalization following the closing of this offering will be adjusted based on the actual initial public offering price and other terms of the offering determined at pricing (in thousands, except share and per share amounts):

	As of March 31, 2021		
	Actual	Pro Forma (Unaudited)	Pro Forma As Adjusted
Cash and cash equivalents	$ 145,924	$ 145,924	$424,844
Long-term debt (inclusive of current portion)	1,581	1,581	1,581
Convertible preferred stock (par value $0.0001 per share; actual: 14,430,622 authorized and 14,430,522 issued and outstanding; pro forma and pro forma as adjusted: 10,000,000 shares authorized, and no shares issued or outstanding)	150,150	—	—
Stockholders' equity (deficit):			
Common stock (par value $0.0001 per share; actual: 44,541,000 shares authorized, 10,295,444 shares issued and outstanding; pro forma: 44,541,000 shares authorized, 36,530,098 shares issued and outstanding; pro forma as adjusted: 300,000,000 shares authorized, 56,709,191 shares issued and outstanding)	1	2	6
Additional paid-in capital	8,340	158,489	437,405
Accumulated deficit	(44,030)	(44,030)	(44,030)
Total stockholders' equity (deficit)	(35,689)	114,461	393,381
Total capitalization	$ 116,042	$ 116,042	$394,962

The number of shares of our common stock issued and outstanding, pro forma and pro forma as adjusted, in the table above is based on 36,530,098 shares of common stock outstanding (after giving effect to the conversion of all of our shares of preferred stock outstanding as of March 31, 2021 into an aggregate of 26,234,654 shares of our common stock immediately prior to the completion of this offering), and excludes as of March 31, 2021:

- 5,009,043 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2021 under the 2013 Plan at a weighted average exercise price of $2.62 per share;
- 454,500 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2021 under the 2012 Plan at a weighted average exercise price of $0.06 per share;
- 1,726,448 shares of common stock available for future issuance as of March 31, 2021 under the 2013 Plan;
- 5,200,000 shares of common stock newly reserved for issuance under the 2021 Plan; and
- 511,000 shares of common stock reserved for future issuance under 2021 ESPP.

DILUTION

If you invest in our common stock in this offering, you will experience immediate and substantial dilution in the pro forma as adjusted net tangible book value of your shares of common stock. Dilution in pro forma as adjusted net tangible book value represents the difference between the initial price to the public per share of our common stock and the pro forma as adjusted net tangible book value per share of our common stock immediately following this offering.

Historical net tangible book value (deficit) per share represents our total tangible assets less total liabilities and convertible preferred stock divided by the number of shares of outstanding common stock as of March 31, 2021, or 10,295,444 shares. Our historical net tangible deficit as of March 31, 2021 was $(35.7) million, or $(3.47) per share of our common stock.

Our pro forma net tangible book value as of March 31, 2021 was $114.5 million, or $3.13 per share, based on the total number of shares of our common stock outstanding as of March 31, 2021. Pro forma net tangible book value, before the issuance and sale of shares in this offering, gives effect to the automatic conversion of all of our outstanding convertible preferred stock outstanding as of March 31, 2021 into an aggregate of 26,234,654 shares of common stock immediately prior to the closing of this offering.

After giving effect to our sale of 19,000,000 shares of common stock in this offering at an initial public offering price of $16.00 per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of March 31, 2021 would have been approximately $393.4 million, or $7.08 per share. This represents an immediate increase in pro forma as adjusted net tangible book value of $3.95 per share to existing stockholders and an immediate dilution of $8.92 per share to investors participating in this offering. Dilution per share to new investors participating in this offering is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the initial public offering price per share paid by new investors.

The following table illustrates this dilution on a per share basis to new investors:

Initial public offering price per share		$16.00
Historical net tangible book value (deficit) per share of common stock as of March 31, 2021	$ (3.47)	
Increase in net tangible book value per share of common stock attributable to pro forma adjustments described above	$ 6.60	
Pro forma net tangible book value (deficit) per share of common stock as of March 31, 2021	$ 3.13	
Increase in pro forma net tangible book value per share of common stock attributable to this offering	3.95	
Pro forma as adjusted net tangible book value per share of common stock after this offering		7.08
Dilution per share of common stock to new investors participating in this offering		$ 8.92

If the underwriters exercise in full their option to purchase additional shares of common stock from us in this offering, our pro forma as adjusted net tangible book value per share after the offering would be $435.8 million, representing an immediate increase in pro forma as adjusted net tangible book value per share of $0.38 to existing stockholders and immediate dilution of $8.54 per share to new investors.

The following table summarizes, on the pro forma as adjusted basis described above as of March 31, 2021, the differences between the number of shares of common stock purchased from us, the total consideration paid to us in cash and the average price per share paid by existing stockholders and by investors participating in this offering at the initial public offering price of $16.00 per share before deducting underwriting discounts and commissions and estimated offering expenses payable by us:

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percentage	Amount	Percentage	
Existing stockholders	36,530,098	66%	$ 160,887,907	35%	$ 4.40
New investors	19,000,000	34%	$ 304,000,000	65%	$ 16.00
Total	55,530,098	100%	$ 464,887,907	100%	

The number of shares of our common stock issued and outstanding, pro forma and pro forma as adjusted, in the table above is based on 36,530,098 shares of common stock outstanding (after giving effect to the conversion of all of our shares of preferred stock outstanding as of March 31, 2021 into an aggregate of 26,234,654 shares of our common stock immediately prior to the completion of this offering), and excludes as of March 31, 2021:

- 5,009,043 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2021 under the 2013 Plan at a weighted average exercise price of $2.62 per share;
- 454,500 shares of common stock issuable upon the exercise of stock options outstanding as of March 31, 2021 under the 2012 Plan at a weighted average exercise price of $0.06 per share;
- 1,726,448 shares of common stock available for future issuance as of March 31, 2021, under the 2013 Plan;
- 5,200,000 shares of common stock newly reserved for issuance under the 2021 Plan; and
- 511,000 shares of common stock reserved for future issuance under the 2021 ESPP.

The table above assumes no exercise of the underwriters' option to purchase additional shares in this offering. If the underwriters' option to purchase additional shares is exercised in full, the number of existing shares held by existing stockholders will be reduced to 63% of the total number of shares of common stock to be outstanding upon completion of this offering, and the number of shares of common stock issued to investors participating in this offering will be further increased to 37% of the total number of shares of common stock to be outstanding upon completion of the offering.

Furthermore, we may choose to raise additional capital through the sale of equity or convertible debt securities due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. New investors will experience further dilution if any of our outstanding options are exercised, new options are issued and exercised under our equity incentive plans or we issue additional shares of common stock, other equity securities or convertible debt securities for lower consideration per share than in this offering in the future.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with the section titled "Summary Consolidated Financial Data," and our consolidated financial statements and the related notes included elsewhere in this prospectus. This discussion and analysis and other parts of this prospectus contain forward-looking statements based upon current beliefs, plans and expectations related to future events and our future financial performance that involve risks, uncertainties and assumptions, such as statements regarding our intentions, plans, objectives and expectations for our business. Our actual results and the timing of selected events could differ materially from those described in or implied by these forward-looking statements as a result of several factors, including those set forth in the section titled "Risk Factors." See also the section titled "Special Note Regarding Forward-Looking Statements."

Overview

We are a clinical-stage biopharmaceutical company dedicated to transforming the lives of patients with devastating diseases by applying our novel CRISPR platform, **C**RISPR **h**ybrid **R**NA-**DNA**, or chRDNA, pronounced "chardonnay," toward the development of next-generation, genome-edited cell therapies. Our renowned founders, including a Nobel laureate, are pioneers in CRISPR genome editing. Our chRDNA technology has demonstrated superior specificity and high efficiency in preclinical studies, which enables us to perform multiple, precise genomic edits, while maintaining genomic integrity.

We believe that our technology has broad potential to generate gene and cell therapies in oncology and in therapeutic areas beyond oncology, including immune cell therapies, cell therapies derived from genome-edited induced pluripotent stem cells, or iPSCs, and *in vivo* genome-editing therapies.

The genome-editing technologies currently used in the allogeneic cell therapy field generally have limited efficiency, specificity, and versatility for performing the multiple, precise genomic edits necessary to address insufficient persistence. Our chRDNA technology is designed to address these genome-editing limitations and improve cell therapy activity. By applying this approach to allogeneic cell therapies, we believe we can unlock their full potential by improving upon their effectiveness and durability.

We are initially focused on advancing multiple proprietary allogeneic cell therapies for the treatment of both hematologic malignancies and solid tumors against cell surface targets for which autologous CAR-T cell therapeutics have previously demonstrated clinical proof of concept, including both CD19 and B cell maturation antigen, or BCMA, as well as new targets. We use our chRDNA technology to enhance, or armor, our cell therapies by creating additional genomic edits to improve persistence of antitumor activity.

Our first lead product candidate, CB-010, is, to our knowledge, the first clinical-stage allogeneic anti-CD19 chimeric antigen receptor T cell, or CAR-T cell, therapy with programmed cell death protein 1, or PD-1, removed from the CAR-T cell surface by a genome-edited knockout of the *PDCD1* gene. We have demonstrated in preclinical models that the PD-1 knockout improves the persistence of antitumor activity by disrupting a pathway that leads to rapid T cell exhaustion. CB-010 is being evaluated in a phase 1 clinical trial in patients with relapsed or refractory B cell non-Hodgkin lymphoma, or B-NHL, with initial data expected in 2022.

Our second lead product candidate, CB-011, is an allogeneic CAR-T cell product candidate and is, to our knowledge, the first anti-BCMA CAR-T cell therapy incorporating an immune cloaking approach that includes both the removal of the endogenous beta-2-microglobulin, or B2M, protein and insertion of a beta-2-microglobulin–human-leukocyte-antigen-E–peptide, or B2M–HLA-E, transgene. This strategy is designed to blunt CAR-T cell rejection by both patient T cells and natural killer, or NK, cells to enable more durable antitumor activity. CB-011 is in preclinical development for relapsed or refractory multiple myeloma, or MM, with an investigational new drug, or IND, filing expected in 2022.

Our CB-012 program is an allogeneic armored CAR-T cell therapy targeting CD371, currently in preclinical development for the treatment of relapsed or refractory acute myeloid leukemia, or AML, with an IND filing expected in 2023. CD371 is an attractive target for AML due to its expression on myeloid cancer cells, its enrichment in leukemic stem cells, and its absence on hematopoietic stem cells.

We are also developing allogeneic CAR-NK cell therapies derived from genome-edited iPSCs for the treatment of solid tumors. These CAR-NK product candidates will contain genomic edits designed to overcome the challenges of targeting solid tumors, including trafficking, heterogeneity, and the immunosuppressive tumor microenvironment.

We control a robust patent portfolio protecting our chRDNA technology as well as certain of our allogeneic cell therapy targets.

In February 2021, we entered into a collaboration with AbbVie Manufacturing Management Unlimited Company, or AbbVie, to develop two new CAR-T cell therapies for AbbVie. We view this collaboration as an external recognition of the potential for our chRDNA genome-editing technology to significantly improve genome-editing specificity and efficiency.

Since our founding in 2011, we have devoted substantially all of our resources to organizing and staffing our company, business planning, raising capital, developing our genome-editing platform technologies, developing our product candidates and building our pipeline, creating and maintaining our intellectual property portfolio, and establishing arrangements with third parties for the manufacture of our product candidates. We do not have any products approved for commercial sale and have not generated any revenues from product sales and have incurred net losses since commencement of our operations.

To date, we have primarily funded our operations through revenues from our license agreements, license and collaboration agreements, and a service agreement; the sale of shares of Intellia Therapeutics, Inc., or Intellia, common stock that we received as consideration for our License Agreement with Intellia; and the sale of our convertible preferred shares. As of March 31, 2021, we had approximately $145.9 million in cash and cash equivalents. Based on our current operating plan, we expect our existing cash will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months from the date the interim condensed consolidated financial statements included elsewhere in this prospectus are available to be issued. See “—Liquidity, Capital Resources and Capital Requirements.”

Our net losses for the fiscal years ended December 31, 2019 and 2020 were $23.4 million and $34.3 million, respectively. Our net losses for the three months ended March 31, 2020 and 2021 were $9.8 million and $13.2 million, respectively. We had an accumulated deficit of $30.9 million and $44.0 million as of December 31, 2020 and March 31, 2021, respectively. Our net losses and operating losses may fluctuate from quarter to quarter and year to year depending primarily on the timing of our clinical trials and nonclinical studies and our other research and development expenses. In addition, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company, including significant legal, audit, accounting, regulatory, tax-related, director and officer liability insurance, investor relations, and other expenses that we did not incur as a private company. We anticipate that our expenses will increase substantially if and as we:

- progress our ANTLER phase 1 clinical trial and advance further clinical development of our CB-010 product candidate;
- continue our preclinical and clinical development of our other product candidates, including CB-011, CB-012, and CB-020, and any other product candidates we identify and choose to develop;
- hire additional clinical, quality control, and scientific personnel;
- seek to identify additional research programs and additional product candidates;

- further develop our genome-editing technologies;
- acquire or in-license technologies;
- expand, maintain, enforce, and defend our intellectual property estate;
- seek regulatory and marketing approvals for any of our product candidates that successfully complete clinical trials, if any;
- establish and expand manufacturing capabilities and supply chain capacity for our product candidates;
- add operational, legal, financial, and management information systems and personnel;
- experience any delays, challenges, or other issues associated with any of the above, including the failure of clinical trials meeting endpoints, the generation of unanticipated preclinical study results or clinical trial data subject to differing interpretations, or the occurrence of potential safety issues or other development or regulatory challenges;
- make royalty, milestone, or other payments under current and any future in-license or assignment agreements;
- establish a sales, marketing, and distribution infrastructure to commercialize any product candidates for which we obtain marketing approval; and
- operate as a public company.

We do not own or operate any manufacturing facilities and we outsource a substantial portion of our clinical trial studies to third parties. We use multiple contract manufacturing organizations, or CMOs, to individually manufacture under current good manufacturing processes, or cGMP, the plasmids, chRDNA guides, Cas proteins, and AAV6 vectors used in the manufacture of our CAR-T cells. We expect to rely on our CMOs in the future for the manufacturing of our product candidates to expedite readiness for future clinical trials and most of these CMOs have demonstrated capability in preparation of materials for commercialization. Additionally, we may decide to build our own manufacturing facility in the future to provide us greater flexibility and control over our clinical or commercial manufacturing needs.

Because of the numerous risks and uncertainties associated with therapeutic product development, we may never achieve profitability, and unless and until we are able to develop and commercialize our product candidates, we will need to continue to raise additional capital. Until such time as we can generate significant revenue from product sales, if ever, we expect to finance our operations through private or public equity or debt financings, collaborations, strategic alliances, and licensing arrangements with third parties. There are no assurances that we will be successful in obtaining an adequate level of financing to support our business plans when needed on acceptable terms, or at all. If we raise additional funds through collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our intellectual property, future revenue streams, research programs, or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise capital as and when needed or on attractive terms, we may have to significantly delay, reduce or discontinue the development and commercialization of our product candidates or scale back or terminate our pursuit of new in-licenses and acquisitions.

Impact of the COVID-19 Pandemic

The COVID-19 pandemic has caused governments worldwide to implement measures to slow the spread of the outbreak through quarantines, travel restrictions, business shutdowns, and other measures. In response to the COVID-19 pandemic, starting on March 17, 2020, our entire workforce began working remotely pursuant to state, county, and city requirements. Additionally, for the period from April 6, 2020, to May 5, 2020, we reduced the

salaries and workload of approximately 50% of our research employees who could not work in the lab during this period. Since May 2020, we have gradually brought back on site all of our research employees whose work must be performed in the lab, and most of our non-research employees are currently working partially remotely and partially on-site. We experienced no significant workforce reduction during the COVID-19 pandemic.

We and our CMOs, CROs, and other third-party vendors may face disruptions that could delay or otherwise affect our ability to initiate and complete preclinical studies or clinical trials. The COVID-19 pandemic has had an impact on our supply chain, although these issues have been alleviated in recent months. For example, in the early stages of the COVID-19 pandemic, we experienced delays in receiving healthy donor cells used in the manufacture of our CB-010 product candidate. We are currently receiving adequate supplies of donor cells.

Since the start of the COVID-19 pandemic, we have been and will continue to be focused on the safety of our employees. In response to the COVID-19 pandemic, we have instituted on-site protocols and procedures in accordance with guidance provided by the Centers for Disease Control, or CDC, the State of California, and regulations and guidelines promulgated by the County of Alameda and the City of Berkeley.

In May 2020, we received a Paycheck Protection Plan, or PPP, loan from the Small Business Administration, or SBA, in the amount of $1.6 million, which we used exclusively to pay employees' salaries. In December 2020 we submitted an application to have our PPP loan forgiven, and on May 22, 2021 our PPP loan was forgiven in full by the SBA.

To the extent the COVID-19 pandemic adversely affects our business prospects, financial condition, and results of operation, it may also have the effect of exacerbating many of the other risks described in the "Risk Factors" section, such as those relating to the timing and results of our planned and future clinical trials and our financing needs. See "Risk Factors" for a further discussion of the potential adverse impact of COVID-19 on our business, results of operations, and financial condition.

Components of Results of Operations

Licensing and Collaboration Revenue

We have not generated any revenue from product sales to date and do not expect to generate any revenue from the sale of products in the foreseeable future. If our development efforts for our product candidates are successful and result in regulatory approval and commercialization, we may generate revenue in the future from product sales. We cannot predict if, when, or to what extent we will generate revenue from the commercialization and sale of our product candidates if we succeed in obtaining regulatory approval for such product candidates.

To date, all of our revenue consists of licensing and collaboration revenue, earned from collaboration and/or licensing agreements entered into with third parties and related parties. Under these agreements, we license rights to certain intellectual property controlled by us. The terms of these arrangements typically include payment to us of one or more of the following: nonrefundable, upfront license fees or exclusivity fees; annual maintenance fees; regulatory and/or commercial milestone payments; research and development payments; and royalties on the net sales of products and/or services. Each of these payments results in licensing and collaboration revenues. Our revenues under such licensing and collaboration agreements were $5.8 million and $12.4 million for the years ended December 31, 2019 and 2020, respectively, and $1.7 million and $1.6 million for the three months ended March 31, 2020 and 2021, respectively. See "Business—Strategic Agreements."

For additional information about our revenue recognition policy related to our licensing and collaboration agreements, see Note 2 to each of our consolidated financial statements and interim condensed consolidated financial statements included elsewhere in this prospectus.

For the foreseeable future we expect substantially all of our revenue will be generated from licensing and collaboration agreements.

Operating Expenses

Research and Development Expenses

Our research and development expenses consist of internal and external expenses incurred in connection with the development of our product candidates, development of our platform technologies, and our in-licensing and assignment agreements.

External costs include:

- costs associated with acquiring technology and intellectual property licenses that have no alternative future uses;
- costs incurred in connection with the preclinical and clinical development of our product candidates, including under agreements with CROs and other third parties that conduct clinical trials on our behalf;
- costs of supplying the components for, and the manufacturing of, our product candidates for use in our preclinical studies and clinical trials; and
- other research and development costs, consisting of laboratory materials and supplies consulting services, and the Memorial Sloan Kettering Cancer Center, or MSKCC, success payments liability.

Internal costs include:

- employee-related costs, including salaries, benefits, and share-based compensation expense, for our research and development personnel; and
- facilities and other overhead expenses, including expenses for rent and facilities maintenance and depreciation.

We expense research and development costs as incurred. Costs of certain activities are recognized based on an evaluation of the progress to completion of specific tasks. Payments made prior to the receipt of goods or services that will be used or rendered for future research and development activities are deferred and capitalized as prepaid expenses and other current assets on our balance sheet. The capitalized amounts are recognized as expense as the goods are delivered or the related services are performed. Historically, we have not tracked external costs by clinical program. In late August 2020, the U.S. Food and Drug Administration, or the FDA, cleared our IND for our CB-010 product candidate. Following this offering, we intend to separately track certain external costs for each clinical program. However, we do not currently track, and do not intend to track, costs that are deployed across multiple programs.

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 that our research and development expenses will increase substantially for the foreseeable future as we continue to implement our business strategy; advance our CB-010 product candidate through clinical trials and later stages of development; conduct clinical trials for our other product candidates; seek regulatory approvals for any product candidates that successfully complete clinical trials; expand our research and development efforts; incur expenses associated with hiring additional personnel to support our research and development efforts; and seek to identify, acquire, and develop additional product candidates.

The successful development of CB-010, CB-011, CB-012, CB-020, and our other potential future product candidates is highly uncertain. Accordingly, at this time, we cannot reasonably estimate or know the

nature, timing, and costs of the efforts that will be necessary to complete the development of these product candidates. We are also unable to predict when, if ever, we will generate revenue and material net cash inflows from the commercialization and sale of any of our product candidates for which we may obtain marketing approval. We may never succeed in achieving regulatory approval for any of our product candidates. The duration, costs, and timing of preclinical studies, clinical trials, and development of our product candidates will depend on a variety of factors, including:

- sufficiency of our financial and other resources;
- acceptance of our chRDNA genome-editing technology;
- ability to develop differentiating features so that our products have a competitive edge;
- completion of preclinical studies;
- establishment, maintenance, enforcement, and defense of patent and other intellectual property rights;
- our ability to not infringe, misappropriate, or otherwise violate third-party intellectual property rights;
- clearance of INDs to initiate clinical trials;
- successful enrollment in, and completion of, our clinical trials on our product candidates;
- data from our clinical trials that support an acceptable risk-benefit profile of our product candidates for the intended patient populations and that demonstrate safety and efficacy;
- entry into collaborations to further the development of our product candidates or for the development of new product candidates;
- successful development of our internal process development and transfer to larger-scale facilities;
- establishment of agreements with CMOs for clinical and commercial supplies and scaling up manufacturing processes and capabilities to support our clinical trials;
- receipt of regulatory and marketing approvals from applicable regulatory authorities;
- regulatory exclusivity for our product candidates;
- establishing sales, marketing, and distribution capabilities and commercial launch of our product candidates if and when approved, whether by us or in collaboration with third parties;
- maintenance of a continued acceptable safety profile of our products post-approval;
- acceptance of our product candidates, if and when approved by the applicable regulatory authorities, by patients, the medical community, and third-party payors;
- ability of our products to compete with other therapies and treatment options;
- establishment and maintenance of healthcare coverage and adequate reimbursement; and
- expanding indications and patient populations for our products.

The following table summarizes our research and development expenses for the years ended December 31, 2019 and 2020 and the three months ended March 31, 2020 and 2021:

	Years Ended December 31,		Three Months Ended March 31,	
	2019	2020	2020	2021
	(in thousands)			
External costs:				
Acquisition of technology and intellectual property licenses	$ 123	$ 3,160	$ 640	$ 1,175
Services provided by third-party CROs, CMOs, and other third parties that conduct preclinical studies and clinical trials on our behalf	4,898	11,021	3,509	2,858
Other research and development expenses	6,765	7,290	1,292	2,722
Total external costs	11,786	21,471	5,441	6,755
Internal costs:				
Payroll and personnel expenses	8,302	8,794	2,155	2,435
Facilities and other allocated expenses	3,547	4,160	1,045	975
Total internal costs	11,849	12,954	3,200	3,410
Total research and development expenses	$23,635	$34,425	$ 8,641	$ 10,165

General and Administrative Expenses

Our general and administrative expenses consist primarily of personnel costs, intellectual property costs, consulting costs, and allocated overhead, including rent, equipment depreciation, and utilities. Personnel costs consist of salaries, benefits, and stock-based compensation for our general and administrative personnel. Intellectual property costs include expenses for filing, prosecuting, and maintaining patents and patent applications, including certain of the patents and patent applications that we license from third parties. We are entitled to receive reimbursement of a portion of the costs for filing, prosecuting, and maintaining certain patents and patent applications from third parties. We accrue for these reimbursements as the respective expenses are incurred and classify such reimbursements as a reduction of general and administrative expenses. During the years ended December 31, 2019 and 2020, we recorded $4.4 million and $5.8 million, respectively, of patent reimbursements as a reduction to general and administrative expense. During the three months ended March 31, 2020 and 2021, we recorded $1.1 million and $2.1 million, respectively, of patent reimbursements as a reduction to general and administrative expense.

We expect that our general and administrative expenses will increase substantially in the future as a result of expanding our operations, including hiring personnel, preparing for potential commercialization of our product candidates, and additional facility occupancy costs, as well as various incremental costs associated with operating as a public company (including increased legal, audit, and accounting fees, regulatory costs related to maintaining compliance with the rules and regulations of the Securities and Exchange Commission, or the SEC, and the Nasdaq Global Select Market, director and officer liability insurance premiums, investor relations activities, and other accompanying compliance and governance costs). We also expect to increase the size of our administrative function to support the growth of our business.

Other Income (Expense)

Other income (expense) consists primarily of interest income earned on cash and money market funds, interest expense for our capital lease, and the promissory note related to our PPP loan, change in the fair value of Intellia common stock in 2019 and 2020 and other income from the sale and assignment of patent rights. During the three months ended March 31, 2020 and 2021, other income (expense) consists primarily of interest income earned on cash and money market funds, interest expense on our capital lease, and the promissory note related to our PPP loan.

Results of Operations

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

The following table summarizes our results of operations for the years ended December 31, 2019 and 2020:

	Years Ended December 31,		Year-over-Year Change	
	2019	2020	$ Change	% Change
	(in thousands, except percentages)			
Licensing and collaboration revenue	$ 5,788	$ 12,361	$ 6,573	114%
Operating expenses				
Research and development	23,635	34,425	10,790	46%
General and administrative	16,458	14,060	(2,398)	(15)%
Total operating expenses	40,093	48,485	8,392	21%
Loss from operations	(34,305)	(36,124)	(1,819)	5%
Other income (expense)				
Interest income	1,047	236	(811)	(77)%
Interest expense	(4)	(20)	(17)	449%
Change in fair value of equity securities	2,294	(733)	(3,027)	(132)%
Other income	—	514	514	100%
Total other income (expense)	3,337	(3)	(3,340)	(100)%
Net loss before provision for income taxes	(30,968)	(36,127)	(5,159)	17%
Benefit from income taxes	(7,537)	(1,819)	5,718	(76)%
Net loss and comprehensive loss	$ (23,431)	$ (34,308)	$ (10,877)	54%

Licensing and Collaboration Revenue

Licensing and collaboration revenue increased $6.6 million, or 114%, from $5.8 million for the year ended December 31, 2019 to $12.4 million for the year ended December 31, 2020. The increase in licensing and collaboration revenue for the year ended December 31, 2020, was primarily driven by a $7.5 million increase related to an exclusive license agreement we entered into in May 2020 with a private company, partially offset by a $1.4 million decrease due to the completion of research and collaboration activities under our Research Collaboration and License Agreement with Genus plc in 2020. The remaining increase was primarily related to other license agreements with various licensees.

The following table summarizes our revenue by licensee for the years ended December 31, 2019 and 2020:

	Years Ended December 31,	
	2019	2020
	(in thousands)	
Genus plc	$ 2,250	$ 844
Private Company, related party	—	7,500
Pioneer, related party(1)	—	(250)
Other licensing agreements	3,538	4,267
Total licensing revenue	$ 5,788	$ 12,361

(1) Includes our upfront payment to Pioneer for assignment of the chRDNA patent family.

Research and Development Expenses

Research and development expenses increased $10.8 million, or 46%, from $23.6 million for the year ended December 31, 2019 to $34.4 million for the year ended December 31, 2020. This increase was primarily related to an increase of $3.0 million in costs associated with our intellectual property license and assignment agreements, an increase of $4.0 million in CMO costs associated with our product candidates, an increase of $2.7 million due to the fair value of the MSKCC success payments liability, an increase of $1.9 million in costs associated with our CRO contracts, an increase of $0.3 million in payments due by us upon the achievement of certain licensing milestones, an increase of $0.6 million in facilities and other allocated expenses, and an increase of $0.5 million in payroll and personnel related expenses, partially offset by a decrease of $2.1 million in laboratory spending due to decreased spending on reagents and lab supplies in 2020 due to the COVID-19 pandemic.

General and Administrative Expenses

General and administrative expenses decreased $2.4 million, or 15%, from $16.5 million for the year ended December 31, 2019 to $14.1 million for the year ended December 31, 2020. This decrease was primarily related to a decrease in legal expenses of $4.0 million related to our Intellia Arbitration (see Note 9 in our consolidated financial statements included elsewhere in this prospectus for more details), a decrease of $1.4 million in reimbursed patent costs, and a decrease of $0.4 million in payroll and personnel related expenses, partially offset by an increase of $2.6 million in costs of filing, prosecuting, and maintaining patents licensed from third parties, and an increase of $0.5 million in facilities and other allocated expense. The remaining increase of $0.3 million was related to increased accounting and professional consulting services.

Other Income (Expense)

Interest income decreased by $0.8 million, or 77%, from $1.0 million for the year ended December 31, 2019 to $0.2 million for the year ended December 31, 2020. This decrease was primarily caused by a decrease in average cash balances in our interest-bearing money market accounts and a decrease in average interest rates.

Interest expense increased by less than $0.1 million for the year ended December 31, 2020, due to interest charged for the promissory note related to our PPP loan.

Change in fair value of equity securities decreased $3.0 million, or 132%, from a gain of $2.3 million for the year ended December 31, 2019 to a loss of $0.7 million for the year ended December 31, 2020. This decrease was primarily due to volatility in stock price of our equity security investment in Intellia’s common stock, as well as the timing and volume of shares of Intellia’s common stock sold during the years ended December 31, 2019 and 2020.

Other income of $0.5 million for the year ended December 31, 2020 was related to earned sale and assignment of certain of our patents and patent applications, which was not an ordinary business activity.

Income Taxes

An income tax benefit of $7.5 million for the year ended December 31, 2019 was generated as a result of an increase in federal net operating losses and research and development tax credits. Income tax benefit decreased $5.7 million for the year ended December 31, 2020. An income tax benefit of $1.8 million was recognized for the year ended December 31, 2020, which was due primarily to the recognition of net operating loss carrybacks under the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, which generated a tax refund of taxes paid for the year ended December 31, 2018.

Comparison of the Three Months Ended March 31, 2020 and 2021

The following table summarizes our results of operations for the three months ended March 31, 2020 and 2021:

	Three Months Ended March 31,		Quarter-over-Quarter Change	
	2020	2021	$ Change	% Change
	(in thousands, except percentages)			
Licensing and collaboration revenue	$ 1,701	$ 1,586	$ (115)	-7%
Operating expenses				
Research and development	8,641	10,165	1,524	18%
General and administrative	3,489	4,596	1,107	32%
Total operating expenses	12,130	14,761	2,631	22%
Loss from operations	(10,429)	(13,175)	(2,746)	26%
Other income (expense)				
Interest income	142	4	(138)	-97%
Interest expense	(3)	(5)	(2)	67%
Change in fair value of equity securities	(733)	—	733	-100%
Other income	21	17	(4)	-19%
Total other income (expense)	(573)	16	589	-103%
Net loss before provision for income taxes	(11,002)	(13,159)	(2,157)	20%
Benefit from income taxes	(1,202)	—	1,202	100%
Net loss and comprehensive loss	$ (9,800)	$ (13,159)	$ (3,359)	34%

Licensing and Collaboration Revenue

Licensing and collaboration revenue decreased by $0.1 million, or 7%, from $1.7 million for the three months ended March 31, 2020 to $1.6 million for the three months ended March 31, 2021. The decrease in licensing and collaboration revenue for the three months ended March 31, 2021 was primarily driven by a $0.6 million decrease due to the completion in 2020 of research and collaboration activities under our Research Collaboration and License Agreement with Genus plc, partially offset by a $0.3 million increase in revenues related to existing license agreements, and a $0.2 million increase in revenues related to new license agreements.

The following table summarizes our revenue by licensee for the three months ended March 31, 2020 and 2021:

	Three Months Ended March 31,	
	2020	2021
	(in thousands)	
Genus plc	$ 563	$ —
Other licensing agreements	1,138	1,586
Total licensing revenue	$ 1,701	$ 1,586

Research and Development Expenses

Research and development expenses increased $1.5 million, or 18%, from $8.6 million for the three months ended March 31, 2020 to $10.2 million for the three months ended March 31, 2021. This increase was primarily related to an increase of $0.8 million related to the purchase of materials related to our pre-clinical programs, an increase of $0.9 million related to the expenses incurred in connection with sublicensing fees due under certain of our assignment and licensing agreements, an increase of $0.7 million related to the change in fair value of the MSKCC success payments liability, and an increase of $0.2 million in payroll and personnel related expenses, offset by a $0.4 million decrease in costs associated with the acquisition of in-process research and development, a $0.6 million decrease in CMO costs associated with our product candidates, and a $0.1 million decrease in rent expenses.

General and Administrative Expenses

General and administrative expenses increased $1.1 million, or 32%, from $3.5 million for the three months ended March 31, 2020 to $4.6 million for the three months ended March 31, 2021. This increase was primarily related to a $1.6 million increase in patent prosecution costs, offset by a $1.0 million increase in patent cost reimbursements recorded as a reduction to general and administrative expenses, a $0.3 million increase in accounting and professional services expenses, a $0.2 million increase in payroll related expenses, and a $0.1 million increase in human resources and recruiting services, partially offset by a $0.1 million decrease in legal expenses.

Other Income (Expense)

Interest income decreased by $0.1 million, or 97%, from $0.1 million for the three months ended March 31, 2020 to zero for the three months ended March 31, 2021. This decrease was primarily caused by a decrease in average cash balances in our interest-bearing money market accounts and a decrease in average interest rates.

Change in fair value of equity securities of $0.7 million was related to Intellia common stock shares that we sold during the three months ended March 31, 2020. We have not held any Intellia shares since March 31, 2020.

Income Tax

During the three months ended March 31, 2020, the Company recorded an income tax benefit of $1.2 million. The income tax benefit was primarily due to the recognition of net operating loss carrybacks under the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, which generated a tax refund of taxes paid for the year ended December 31, 2018. No income tax benefit or expense was recorded during the three months ended March 31, 2021.

Unaudited Pro Forma Information

Immediately prior to the completion of this offering, all outstanding shares of our convertible preferred stock will automatically convert into shares of our common stock assuming the sale of shares in this offering at the public offering price of $16.00 per share. The unaudited pro forma basic and diluted net loss per share for the year ended December 31, 2020 and for the three months ended March 31, 2021 were computed using the weighted-average number of shares of common stock outstanding, including the pro forma effect of the conversion of all outstanding shares of convertible preferred stock into shares of common stock, as if such conversion had occurred at the beginning of the period, or their issuance dates if later. Pro forma net loss per share does not include the shares expected to be sold in this offering.

The following table sets forth the computation of the unaudited pro forma basic and diluted net loss per share of common stock for the periods presented:

	Year Ended December 31, 2020	Three Months Ended March 31, 2021
	(in thousands, except share and per share data)	
Numerator:		
Net loss used in calculating pro forma net loss per share, basic and diluted	$ (34,308)	$ (13,159)
Denominator:		
Weighted-average shares of common stock outstanding	8,546,741	9,499,448
Weighted-average convertible preferred stock	14,119,631	18,157,972
Pro forma weighted-average shares outstanding, basic and diluted	22,666,372	27,657,420
Pro forma net loss per share, basic and diluted	$ (1.51)	$ (0.48)

Liquidity, Capital Resources and Capital Requirements

Sources of Liquidity

Since our inception, we have not generated any revenue from product sales and have incurred significant operating losses and negative cash flows from our operations. We have funded our operations through the sale of Series A, A-1, B, and C convertible preferred stock that generated approximately $150.1 million in net proceeds. We also received approximately $88.4 million in net proceeds from the sale of Intellia common stock received under our License Agreement with Intellia. Additionally, we received approximately $72.1 million from licensing agreements, licensing and collaboration agreements, a service agreement, patent assignments, and government grants, including $30.0 million that was received from AbbVie.

As of December 31, 2020 and March 31, 2021, we had cash and cash equivalents of $16.0 million and $145.9 million, respectively. In March 2021, we received net proceeds of $108.8 million from our Series C convertible preferred stock financing and $30.0 million from AbbVie under our Collaboration and License Agreement. We will continue to be dependent upon equity financing, debt financing, and/or other forms of capital raises at least until we are able to generate significant positive cash flows from our operations. We have no ongoing material financing commitments, such as lines of credit or guarantees, that are expected to affect our liquidity over the next five years.

Based on our current operating plan, we expect our existing cash and cash equivalents will enable us to fund our operating expenses and capital expenditure requirements for at least the next 12 months from the date the interim condensed consolidated financial statements included elsewhere in this prospectus are available to be issued. We have based these estimates on our current assumptions that may require future adjustments based on our ongoing business decisions. Accordingly, we may require additional capital resources earlier than we currently expect.

Funding Requirements

Our primary use of cash is to fund operating expenses and research and development 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, accrued expenses, and prepaid expenses.

Our future funding requirements will depend on many factors, including the following:

- the initiation, progress, timing, costs, and results of preclinical studies and clinical trials for our product candidates;
- the clinical development plans we establish for these product candidates;
- the number and characteristics of product candidates that we develop;
- the increase in the number of our employees and expansion of our physical facilities to support growth initiatives;
- the outcome, timing, and cost of meeting regulatory requirements established by the FDA and other comparable foreign regulatory authorities;
- whether we enter into any additional collaboration agreements and the terms of any such agreements;
- the cost of filing, prosecuting, maintaining, and enforcing our patents and other intellectual property rights;
- the extent to which we acquire or in-license other product candidates and technologies;
- the cost of defending intellectual property disputes, including patent infringement actions brought by third parties against our products when we file for regulatory approval or thereafter;
- the effect of competing technological and market developments;
- the cost and timing of completion of commercial-scale outsourced manufacturing activities or the cost and timing of completion of clinical-scale and/or commercial-scale internal manufacturing activities;
- the cost of establishing sales, marketing, and distribution capabilities for any product candidates for which we may receive regulatory approval in regions where we choose to commercialize our products without a partner;
- the amount of revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval;
- the achievement of milestones or occurrence of other developments that trigger payments by third parties under any collaboration or licensing agreements;
- our implementation of various computerized informational systems and efforts to enhance operational systems;
- the impact of the COVID-19 pandemic on our clinical development or operations; and
- the costs associated with being a public company.

Furthermore, our operating plans may change, and we may need additional funds to meet operational needs and capital requirements for clinical trials and other research and development expenditures.

If we need to raise additional capital to fund our operations, funding may not be available to us on acceptable terms, or at all. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of, or suspend one or more of our preclinical studies, clinical trials, research and development programs, or commercialization efforts. We may seek to raise any necessary additional capital through a combination of public or private equity offerings, debt financings, collaborations, and licensing arrangements. 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 raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in dilution to our stockholders. If we raise additional capital through marketing and distribution arrangements or other collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish certain valuable rights to our product candidates, technologies, future revenue streams, or research programs or grant licenses on terms that may not be favorable to us.

Cash Flows

Comparison of the Years Ended December 31, 2019 and 2020 and the Three Months ended March 31, 2020 and 2021

The following summarizes our cash flows for the periods indicated:

	Years Ended December 31,		Three Months Ended March 31,	
	2019	2020	2020	2021
	(in thousands)			
Cash provided by (used in) operating activities	$ (32,006)	$ (33,215)	$ (9,243)	$ 20,313
Cash provided by (used in) investing activities	27,233	6,363	7,020	(22)
Cash provided by (used in) financing activities	172	1,735	(30)	109,680
Net increase (decrease) in cash and cash equivalents	$ (4,601)	$ (25,117)	$ (2,253)	$129,971

Cash Provided by (Used in) Operating Activities

Net cash used in operating activities was $32.0 million for the year ended December 31, 2019 and $33.2 million for the year ended December 31, 2020. Net cash used in operating activities was $9.2 million for the three months ended March 31, 2020 and net cash provided by operating activities was $20.3 million for the three months ended March 31, 2021.

Cash used in operating activities in the year ended December 31, 2019 was primarily due to our net loss for the year of $23.4 million adjusted by non-cash charges and net changes in our net operating assets and liabilities. Our non-cash charges were comprised of $1.2 million of stock-based compensation and $0.8 million of depreciation and amortization expense, which were offset by a change in fair value of equity securities of $2.3 million. The changes in our net operating assets and liabilities were primarily due to a decrease of $7.1 million in deferred tax liabilities, an increase of $1.3 million in prepaid expenses and other current assets, an increase of $0.8 million in contract assets, an increase of $0.9 million in other receivables, an increase of $0.7 million in accrued expenses and other current liabilities and an increase of $0.4 million in other liabilities, partially offset by a decrease of $0.6 million in accounts receivable, an increase of $1.2 million in accounts payable, a decrease of $0.8 million in deferred revenue and a decrease of $0.3 million in other assets.

Cash used in operating activities in the year ended December 31, 2020, was primarily due to our net loss for the period of $34.3 million adjusted by non-cash charges and net changes in our net operating assets and liabilities. Our non-cash charges included $1.0 million of stock-based compensation expense, $0.9 million of depreciation expense, $0.8 million of change in fair value of equity securities, and $2.7 million for the fair value of the MSKCC success payments liability, which were offset by $7.6 million of non-cash consideration for

licensing and collaboration revenue. Acquired in-process research and development of $3.1 million includes $2.1 million of non-cash consideration and $1.0 million of cash consideration reported in our investing activities. The changes in our net operating assets and liabilities were primarily due to an increase of $2.3 million in accrued expenses and other current liabilities, a decrease of $0.4 million in prepaid expenses and other current assets, partially offset by an increase of $0.5 million in contract assets, an increase of $0.5 million in other receivables, a decrease of $0.6 million in deferred revenue, and a decrease of $0.5 million in deferred tax liabilities.

Cash used in operating activities in the three months ended March 31, 2020 was primarily due to our net loss for the quarter of $9.8 million adjusted by non-cash charges and net changes in our net operating assets and liabilities. Our non-cash charges were comprised of a change in fair value of equity securities of $0.7 million, $0.2 million of stock-based compensation, and $0.2 million of depreciation and amortization expense. Acquired in-process research and development of $0.4 million included $0.4 million of cash consideration reported in our investing activities. The changes in our net operating assets and liabilities were primarily due to a decrease of $1.2 million in prepaid expenses and other current assets, an increase of $0.6 million in accrued expenses and other current liabilities, and a decrease of $0.3 million in contract assets, partially offset by a decrease of $1.0 million in accounts payable and an increase of $0.5 million in other receivables and a decrease of $0.4 million in deferred revenue.

Cash provided by operating activities in the three months ended March 31, 2021 was primarily due to a $30.0 million upfront payment received from AbbVie pursuant to our License and Collaboration Agreement recorded as deferred revenues, partially offset by a net loss for the quarter of $13.2 million. Our non-cash charges were comprised of a change in the fair value of the MSKCC success payments liability of $0.7 million, $0.3 million of stock-based compensation, and $0.2 million of depreciation and amortization expense. The changes in our net operating assets and liabilities were primarily due to an increase of $3.9 million in accrued expenses and other current liabilities and a $0.4 million decrease in contract assets, partially offset by an increase of $1.1 million in other receivables, an increase of $0.6 million in prepaid expenses and other current assets, and an increase of $0.4 million in other assets.

Cash Provided by (Used in) Investing Activities

During the years ended December 31, 2019 and 2020, cash provided by investing activities was $27.2 million and $6.4 million, respectively. During the three months ended March 31, 2020, net cash provided by investing activities was $7.0 million, and during the three months ended March 31, 2021 net cash used in investing activities was less than $0.1 million.

Cash provided by investing activities for the year ended December 31, 2019 was primarily due to our receipt of $28.1 million in proceeds from the sale of our investment in Intellia common stock, offset by purchases of property and equipment of $0.9 million.

Cash provided by investing activities for the year ended December 31, 2020 was primarily due to our receipt of $7.7 million in proceeds from the sale of our investment in Intellia common stock, offset by cash paid for the acquisition of in-process research and development of $1.0 million and purchases of property and equipment of $0.3 million.

Cash provided by investing activities for the three months ended March 31, 2020 was primarily due to our receipt of $7.7 million in proceeds from the sale of our investment in Intellia common stock partially offset by purchases of property and equipment of $0.2 million and payments of $0.4 million to acquire in-process research and development. Since March 31, 2020, we do not hold any Intellia common stock.

Cash used in investing activities for the three months ended March 31, 2021 was primarily due to purchases of property and equipment in the amount of less than $0.1 million.

Cash Provided by (Used in) Financing Activities

During the years ended December 31, 2019 and 2020, cash provided by financing activities was $0.2 million and $1.7 million, respectively. During the three months ended March 31, 2020, cash used in financing activities was less than $0.1 million and, during the three months ended March 31, 2021, cash provided by financing activities was $109.7 million.

Cash provided by financing activities for the year ended December 31, 2019 was primarily due to our receipt of proceeds from common stock options exercised of $0.2 million.

Cash provided by financing activities for the year ended December 31, 2020 was primarily due to our receipt of proceeds from the issuance of the promissory note of $1.6 million related to our PPP loan. On May 22, 2021, our PPP loan was forgiven in full.

Cash used in financing activities for the three months ended March 31, 2020 was primarily due to payments under capital lease agreement in the amount of less than $0.1 million.

Cash provided by financing activities for the three months ended March 31, 2021 was primarily due to our receipt of net proceeds from the issuance of Series C preferred stock in the amount of $109.2 million and proceeds from common stock options exercised of $0.6 million, partially offset by the repayments of capital lease obligation in the amount of $0.1 million.

Contractual Obligations and Commitments

The following summarizes our contractual obligations as of December 31, 2020:

	Due by Period				
	Less Than 1 Year	1 – 3 Years	3 – 5 Years	More Than 5 Years	Total
	(in thousands)				
Operating leases(1)	$ 2,610	$ 5,461	$ 5,601	—	$ 13,672
Promissory note(2)	666	932	—	—	1,598
Total obligations(3)	$ 3,276	$ 6,393	$ 5,601	—	$ 15,270

(1) The operating lease obligations are primarily related to the facility lease for our corporate headquarters and research and development facility in Berkeley, California, expiring in 2025 and any extension or termination provisions, as relevant.
(2) The amounts reported for the promissory note represent future minimum payments for our PPP loan.
(3) Excludes payment obligations under our in-license and assignment agreements as of December 31, 2020, which are contingent upon our achievement of pre-defined clinical, regulatory, and commercial milestones; changes in the price of our common stock; a change in control; and royalties on net product sales. See the section titled “Business—Strategic Agreements” for more information about these payment obligations.

The following summarizes our contractual obligations as of March 31, 2021:

	Due by Period				
	Less Than 1 Year	1 – 3 Years	3 – 5 Years	More Than 5 Years	Total
	(in thousands)				
Operating leases(1)	$ 3,406	$ 7,136	$ 7,620	$ 26,168	$ 44,330
Promissory note(2)	666	932	—	—	1,598
Total obligations(3)	$ 4,272	$ 7,868	$ 7,620	$ 26,168	$ 45,928

(1) The operating lease obligations are primarily related to the facility lease for our corporate headquarters and research and development facility in Berkeley, California, expiring in 2031 and any extension or termination provisions, as relevant.
(2) The amounts reported for the promissory note represent future minimum payments for PPP loan. Our PPP loan was forgiven on May 22, 2021 by the SBA.
(3) Excludes payment obligations under our in-license and assignment agreements as of March 31, 2021, which are contingent upon our achievement of pre-defined clinical, regulatory, and commercial milestones; in the case of MSKCC changes in the price of our common stock and any change in control; and royalties on net product sales. See the section titled "Business—Strategic Agreements" for more information about these payment obligations.

The operating lease obligations are primarily related to the facility lease for our corporate headquarters and research and development facility in Berkeley, California. On March 31, 2021, this lease agreement was amended to include additional office and laboratory space and extend the lease term to March 31, 2031.

Other Contractual Obligations

We enter into contracts in the normal course of business with suppliers, CMOs, CROs, clinical trial sites and the like.

These agreements provide for termination at the request of either party with less than one-year notice and therefore we believe that our non-cancelable obligations under these agreements are not material and they are not included in the table above.

We have not included milestones, royalty or other payments due under our existing license agreements in the table above due to the uncertainty of the occurrence of the events requiring payment under those agreements. See "Business—Strategic Agreements."

We entered into an Exclusive License Agreement with MSKCC in November 2020, under which we exclusively licensed certain know-how, materials and intellectual property in a specified field related to our CB-012 program. We are obligated to make success payments to MSKCC of up to $35.0 million if our stock price increases by certain multiples of increasing value based on a comparison of the fair market value of our common stock compared with $5.1914 per share, which is the split-adjusted initial price at which our Series B convertible preferred stock was sold, as adjusted for any future stock splits, during a specified time interval. The relevant time interval commences the first patient is dosed with our CB-012 product candidate in the first phase 1 clinical trial and ends upon the earlier of the third anniversary of approval of our biologics license application, or BLA, by the FDA or 10 years from the date the first patient was dosed with CB-012 in the first phase 1 clinical trial. Additionally, if we undergo a change of control during the specified time interval, a change of control payment may be owed, depending upon the increase in our stock price due to the change of control and also to what extent success payments have already been paid. In no event will the combination of success payments and the change of control payment exceed $35.0 million. The relevant time period during which MSKCC is eligible for success payments and a change of control payment has not yet commenced; thus, this offering will not trigger any such payments. As of December 31, 2020 and March 31, 2021, the timing and likelihood of triggering success payments are uncertain and therefore any related payments are not included in the tables above. See "Business—Strategic Agreements—Memorial Sloan Kettering Cancer Center (MSKCC)" and the subsection titled "—MSKCC Success Payments Liability" within "Critical Accounting Polices and Estimates" section below.

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 applicable SEC rules.

Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities.

We had cash and cash equivalents of $16.0 million as of December 31, 2020 and $145.9 million as of March 31, 2021, which consisted of bank deposits and money market mutual funds. The primary objective of our investment activities is to preserve capital to fund our operations while earning a low-risk return. Because our money market mutual funds are short-term in duration, we believe that our exposure to interest rate risk is not significant, and a hypothetical 1% change in market interest rates during any of the periods presented, would not have had a significant impact on the total value of our portfolio.

We are not currently exposed to significant market risk related to changes in foreign currency exchange rates; however, we have contracted with and may continue to contract with vendors that are located outside of the United States and our operations may be subject to fluctuations in foreign currency exchange rates in the future.

Inflation generally affects us by increasing our cost of labor and research and development costs. We do not believe that inflation had a material effect on our business, results of operations, or financial condition during the years ended December 31, 2019 and 2020 and during the three months ended March 31, 2020 and 2021.

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 and interim condensed consolidated financial statements, which have been prepared in accordance with United States generally accepted accounting principles, or GAAP. The preparation of these consolidated financial statements and interim condensed 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 and interim condensed consolidated financial statements, as well as the reported expenses incurred during the reporting periods. These estimates and assumptions are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates and assumptions could occur in the future. 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. Changes in estimates are reflected in reported results for the period in which they become known. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more details in Note 2 to each of our consolidated financial statements and interim condensed consolidated financial statements included elsewhere in this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements and interim condensed consolidated financial statements.

Revenue Recognition

We recognize revenue when a licensee or assignee, or a customer, obtains control of the promised goods or services (*e.g.*, an intellectual property license), in an amount that reflects the consideration that we have received or expect to receive in exchange for those goods or services.

We apply judgment to determine whether agreements are within the scope of revenue for customers or other accounting guidance at an agreement's effective date. Our revenues are primarily derived through our license agreements and license and collaboration agreements. The terms of these types of agreements may include (i) licenses for our technology, (ii) research and development services, and (iii) services or obligations in connection with participation in research or steering committees. Payments to us under these arrangements typically include one or more of the following: nonrefundable upfront license or exclusivity fees; annual maintenance fees; regulatory and/or commercial milestone payments; research and development payments; and royalties on the net sales of licensed products and/or services.

We assess whether the promises in our arrangements with customers are considered as distinct performance obligations that should be accounted for separately. Judgment is required to determine whether the license to intellectual property is distinct from the research and development services or participation on steering committees.

If the license to intellectual property controlled by us is determined to be distinct from the other performance obligations identified in the arrangement, we recognize revenues allocated to the license at the point in time when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are combined with other promises, we utilize our judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. We evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Certain of our license agreements have two performance obligations: a license and a material right for annual license renewals. Such license agreements require payments of non-refundable annual license fees by the licensees (referred to as maintenance fees in the license agreements), which are accounted for as material rights for license renewals. We recognize revenue when the license is delivered and the term commences. Revenue for the material right for license renewals is recognized at the point in time the annual license fee is paid by the licensee and the renewal period begins.

Our collaboration and license agreements may include contingent milestone payments. Such milestone payments are typically payable when the collaboration partner or licensee achieves certain predetermined clinical, regulatory, and/or commercial milestones. Milestone payments that are not within our or the licensee’s control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. At each reporting date, we re-evaluate whether the milestones are considered probable of being achieved and estimate the amount to be included in the transaction price by using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price in such period of determination.

Our collaboration and license agreements may also include contingent payments related to sales-based milestones. Sales-based milestones are typically payable when annual sales of a covered product reach specified levels. Sales-based milestones are recognized at the later of when the associated performance obligation has been satisfied or when the sales occur. Unlike other contingency payments, such as regulatory milestones, sales-based milestones are not included in the transaction price based on estimates at the inception of the contract, but rather, are included when the sales or usage occur.

Research and Development Expenses and Accrued Liabilities

Research and development expenses are charged to expense as incurred. Research and development expenses include certain payroll and personnel expenses; laboratory supplies; consulting costs; external clinical research and development expenses; and allocated overhead, including rent, equipment depreciation, and utilities.

We record accrued liabilities for estimated costs of research and development activities conducted by third-party service providers, CROs, and CMOs. We accrue for these costs based on factors such as estimates of the work completed and in accordance with service agreements established with these third-party service providers.

We make significant judgments and estimates in determining the accrual balance in each reporting period. As actual costs become known, we adjust our accruals. Although we do not expect our estimates to be materially different than the actual amounts incurred, such estimates for the status and timing of services performed relative to the actual status and timing of services performed may vary and could result in us reporting amounts that are too high or too low in any one period. Our accrual is dependent, in part, upon the receipt of timely and accurate reporting from CROs, CMOs, and other third-party vendors. Variations in the assumptions

used to estimate accruals including, but not limited to, the number of patients enrolled, the rate of patient enrollment and the actual services performed, may vary from our estimates, resulting in adjustments to clinical trial expenses in future periods. Changes in these estimates that result in material changes to our accruals could materially affect our financial condition and results of operations.

Stock-Based Compensation Expense

Stock-based compensation expense related to awards to employees is measured at the grant date based on the fair value of the award. The fair value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the requisite service period of the awards, which is generally the vesting period, and is adjusted for pre-vesting forfeitures in the period in which the forfeitures occur.

We use the Black-Scholes valuation model as the method for determining the estimated fair value of stock-based awards.

Expected Term—Expected term represents the period that our stock-based awards are expected to be outstanding and is determined using the simplified method.

Expected Volatility—Expected volatility is estimated by studying the volatility of comparable public companies for similar terms.

Expected Dividend—The Black-Scholes valuation model calls for a single expected dividend yield as an input. To date, we have not declared or paid any dividends.

Risk-Free Interest Rate—The risk-free interest rate is based on the U.S. Treasury zero-coupon issued in effect at the time of grant for periods corresponding with the expected term of the option.

Stock-based compensation expense related to awards to non-employees, such as consultants, is recognized based on the then-current fair value at each grant date over the associated service period of the award, which is generally the vesting term, using the straight-line method. The fair value of non-employee stock options is estimated using the Black-Scholes valuation model with assumptions generally consistent with those used for employee stock options, with the exception of the expected term, which is the remaining contractual life at each measurement date. See Note 12 in each of our consolidated financial statements and interim condensed consolidated financial statements included elsewhere in this prospectus for more information on assumptions used in estimated stock-based compensation expense.

We recorded share-based compensation expense of $1.2 million and $1.0 million for the years ended December 31, 2019 and 2020, respectively, and $0.2 million and $0.3 million for the three months ended March 31, 2020 and 2021, respectively. As of December 31, 2020, there was $2.1 million of total unrecognized compensation expense, which we expect to recognize over a remaining weighted-average period of 1.2 years. As of March 31, 2021, there was $6.0 million of total unrecognized compensation expense, which we expect to recognize over a remaining weighted-average period of 1.7 years. We expect to continue to grant equity-based awards in the future, and to the extent that we do, our share-based compensation expense recognized in future periods will likely increase.

The intrinsic value of all outstanding incentive awards as of July 12, 2021 was $64.3 million based on the initial public offering price of $16.00 per share, of which approximately $10.5 million was related to vested incentive shares and approximately $53.8 million was related to unvested incentive shares.

Fair Value of Common Stock

The fair value of the common stock underlying our equity awards was determined by management, considering input from third-party valuation analyses, and approved on each grant date by our board of directors.

In determining the fair value of our common stock, the methodologies used to estimate the enterprise value are performed using methodologies, approaches, and assumptions consistent with the American Institute of Certified Public Accountants Accounting and Valuation Guide, Valuation of Privately-Held-Company Equity Securities Issued as Compensation, or the Practice Aid. Our management's approach to estimate the fair value of our common stock considers a number of objective and subjective factors including valuations of our common stock performed with the assistance of independent third-party valuation specialists; our stage of development and business strategy, including the status of research and development efforts and the material risks relating to the business and industry; our results of operations and financial position, including levels of available capital resources; the valuation of publicly traded companies in the life sciences and biotechnology sectors, as well as recently completed mergers and acquisitions of peer companies; the lack of marketability of our common stock; the prices of convertible preferred shares sold to investors in arm's length transactions and the rights, preferences and privileges of our convertible preferred stock relative to those of our common stock; and the likelihood of achieving a liquidity event for the holders of the common and convertible preferred stock, such as an initial public offering or a sale, given prevailing market conditions.

For our valuations performed on and prior to December 31, 2020, we utilized an Option Pricing Method, or OPM, based analysis, primarily the OPM Backsolve methodology, to determine the estimated fair value of our common stock. We determined this was the most appropriate method for determining the fair value of our common stock based on our stage of development and other relevant factors. Within the OPM framework, the Backsolve method for inferring the total equity value implied by a recent financing transaction involves the construction of an allocation model that takes into account our capital structure and the rights and preferences of each class of shares, then assumes reasonable inputs for the other OPM variables (expected time to liquidity, volatility, risk-free rate, etc.). The total equity value is then iterated in the model until the model output value for the equity class sold in a recent financing round equals the price paid in that round. The OPM is generally utilized when specific future liquidity events are difficult to forecast, *e.g.*, the entity has many choices and options available, and the entity's value depends on how well it follows an uncharted path through the various possible opportunities and challenges. If a recent financing was more than one year from the valuation date, we adjusted our equity value for reasonable market adjustments by taking into account our internal progress towards our business plans. In determining the estimated fair value of our common stock, management also considered the fact that our common stock cannot be freely traded in the public markets. Accordingly, we applied discounts to reflect the lack of marketability of our common stock on the weighted-average expected time to liquidity. The estimated fair value of our common stock at each valuation date reflected a non-marketability discount partially based on the anticipated likelihood and timing of a future liquidity event.

For our valuations performed after December 31, 2020, we utilized a hybrid method that combines the Probability-Weighted Expected Return Method, or PWERM, an accepted valuation method described in the Practice Aid, and the OPM. We determined this was the most appropriate method for determining the fair value of our common stock based on our stage of development and other relevant factors. The PWERM is a scenario-based analysis that estimates the value per share of common stock based on the probability-weighted present value of expected future equity values for the common stock, under various possible future liquidity event scenarios, considering the rights and preferences of each class of shares, discounted for a lack of marketability. Under the hybrid method, an OPM Backsolve was utilized to determine the fair value of our common stock in certain of the PWERM scenarios (capturing situations where our development path and future liquidity events were difficult to forecast) and potential initial public offering exit events were explicitly modeled in the other PWERM scenarios. A discount for lack of marketability was applied to the value derived under each scenario to account for a lack of access to an active public market.

The assumptions underlying these valuations represented our management's best estimates, which involved inherent uncertainties and the application of management's judgment. As a result, if we had used significantly different assumptions or estimates, the fair value of our common stock and our stock-based compensation expense could have been materially different. Following the closing of this offering, our board of

directors will determine the fair market value of our common stock based on its closing price as reported on the date of grant on the primary stock exchange on which our common stock is traded.

MSKCC Success Payments Liability

Under our MSKCC Exclusive License Agreement, we are obligated to make success payments and a change of control payment to MSKCC of up to $35.0 million, as discussed above. The liability associated with these potential success payments is accounted for at fair value as long-term liability. The nature of the success payments liability is a contingent consideration for the MSKCC license and, as such, it is accounted for as research and development expenses. The success payments liability is estimated at fair value at inception and at each subsequent balance sheet date, and changes in the fair value of the liability are included in operating expenses in our consolidated statements of operations and comprehensive loss and interim condensed consolidated statements of operations and comprehensive loss. Changes in fair value of the success payments liability were insignificant for the year ended December 31, 2020. As of the December 31, 2020 valuation measurement date, the fair value of this success payments liability was determined to be $2.7 million. Change in fair value of the success payments liability was $0.7 million for the three months ended March 31, 2021. As of the March 31, 2021 valuation measurement date, the fair value of this success payments liability was determined to be $3.3 million.

To determine the estimated fair value of the MSKCC success payments liability, we use a Monte Carlo simulation methodology, which models the future movement of our stock price based on several key variables. The following variables were incorporated in the estimated fair value of the success payments liability: estimated term of the success payments, fair value of common stock, expected volatility, risk-free interest rate, and estimated number and timing of valuation measurement dates on the basis of which payments may be triggered. The computation of expected volatility was estimated using a combination of available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption and its historical and projected volatility. There are several valuation measurement dates that will occur subsequent to this offering, on the basis of which payments may be triggered.

Income Taxes

We account for income taxes using the asset and liability method. We recognize deferred tax assets and liabilities for the expected future tax consequences of events that have been included in our consolidated financial statements and interim condensed consolidated financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Tax benefits related to uncertain tax positions are recognized when it is more likely than not that a tax position will be sustained during an audit. Interest and penalties related to unrecognized tax benefits are included within the provision for income tax.

Recently Issued Accounting Pronouncements

See Note 2 to each of our consolidated financial statements and interim condensed consolidated financial statements included elsewhere in this prospectus for more information regarding recently issued accounting pronouncements.

Indemnification Agreements

As permitted under Delaware General Corporation Law and in accordance with our amended and restated bylaws, we indemnify our executive officers and directors for certain events or occurrences while the executive officer or director is or was serving in such capacity. We are also party to indemnification agreements

with our executive officers and directors. We believe the fair value of the indemnification rights and agreements is minimal. Accordingly, we have not recorded any liabilities for these indemnification rights and agreements as of March 31, 2021.

Emerging Growth Company Status

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements and interim condensed consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

We expect to use the extended transition period for any other new or revised accounting standards during the period in which we remain an emerging growth company. As described in “Recently adopted accounting pronouncements” in our consolidated financial statements and interim condensed consolidated financial statements included elsewhere in this prospectus, we early adopted multiple accounting standards, as the JOBS Act does not preclude an emerging growth company from adopting a new or revised accounting standard earlier than the time that such standard applies to private companies to the extent early adoption is allowed by the accounting standard.

BUSINESS

Overview

We are a clinical-stage biopharmaceutical company dedicated to transforming the lives of patients with devastating diseases by applying our novel CRISPR platform, **C**RISPR **h**ybrid **R**NA-**DNA**, or chRDNA, pronounced "chardonnay," toward the development of next-generation, genome-edited cell therapies. Our renowned founders, including a Nobel laureate, are pioneers in CRISPR genome editing. Our chRDNA technology has demonstrated superior specificity and high efficiency in preclinical studies, which enables us to perform multiple, precise genomic edits, while maintaining genomic integrity.

We believe that our technology has broad potential to generate gene and cell therapies in oncology and in therapeutic areas beyond oncology, including immune cell therapies, cell therapies derived from genome-edited induced pluripotent stem cells, or iPSCs, and *in vivo* genome-editing therapies.

The genome-editing technologies currently used in the allogeneic cell therapy field generally have limited efficiency, specificity, and versatility for performing the multiple, precise genomic edits necessary to address insufficient persistence. Our chRDNA technology is designed to address these genome-editing limitations and improve cell therapy activity. By applying this approach to allogeneic cell therapies, we believe we can unlock their full potential by improving upon their effectiveness and durability.

We are initially focused on advancing multiple proprietary allogeneic cell therapies for the treatment of both hematologic malignancies and solid tumors against cell surface targets for which autologous CAR-T cell therapeutics have previously demonstrated clinical proof of concept, including both CD19 and B cell maturation antigen, or BCMA, as well as new targets. We use our chRDNA technology to enhance, or armor, our cell therapies by creating additional genomic edits to improve persistence of antitumor activity.

Our first lead product candidate, CB-010, is, to our knowledge, the first clinical-stage allogeneic anti-CD19 chimeric antigen receptor T cell, or CAR-T cell, therapy with programmed cell death protein 1, or PD-1, removed from the CAR-T cell surface by a genome-edited knockout of the *PDCDI* gene. We have demonstrated in preclinical models that the PD-1 knockout improves the persistence of antitumor activity by disrupting a pathway that leads to rapid T cell exhaustion. CB-010 is being evaluated in a phase 1 clinical trial in patients with relapsed or refractory B cell non-Hodgkin lymphoma, or B-NHL, with initial data expected in 2022.

Our second lead product candidate, CB-011, is an allogeneic CAR-T cell product candidate, and is, to our knowledge, the first anti-BCMA CAR-T cell therapy incorporating an immune cloaking approach that includes both the removal of the endogenous beta-2 microglobulin, or B2M, protein and insertion of a beta-2-microglobulin–human-leukocyte-antigen-E–peptide, or B2M–HLA-E, transgene. This strategy is designed to blunt CAR-T cell rejection by both patient T cells and natural killer, or NK, cells to enable more durable antitumor activity. CB-011 is in preclinical development for relapsed or refractory multiple myeloma, or MM, with an investigational new drug, or IND, filing expected in 2022.

CB-012 is an allogeneic armored CAR-T cell product candidate targeting CD371, currently in preclinical development for the treatment of relapsed or refractory acute myeloid leukemia, or AML, with an IND filing expected in 2023. CD371 is an attractive target for AML due to its expression on myeloid cancer cells, its enrichment in leukemic stem cells, and its absence on hematopoietic stem cells.

We are also developing allogeneic CAR-NK cell therapies derived from genome-edited iPSCs for the treatment of solid tumors. These CAR-NK products will contain genomic edits designed to overcome the challenges of targeting solid tumors, including trafficking, heterogeneity, and the immunosuppressive tumor microenvironment.

We control a robust patent portfolio protecting our chRDNA technology as well as certain of our allogeneic cell therapy targets.

In February 2021, we entered into a collaboration with AbbVie Manufacturing Management Unlimited Company, or AbbVie, to develop two new CAR-T cell therapies for AbbVie. We view this collaboration as an external recognition of the potential for our chRDNA genome-editing technology to significantly improve genome-editing specificity and efficiency.

Current Challenges in Allogeneic Cell Therapies

Immune cell therapies have emerged as a revolutionary and potentially curative treatment for hematologic malignancies and solid tumors. The approval and launch of multiple first generation CD19- or BCMA-directed autologous CAR-T cell products have laid the foundation and opened a path for the development of more advanced cell therapeutics, including CAR-T and CAR-NK cell products with next-generation capabilities and approaches. Among these approaches, allogeneic cell therapy is positioned to unlock the broad potential of engineered immune cells as a leading therapeutic modality. However, expansion, persistence, and trafficking of allogeneic CAR-T and CAR-NK cells are critical to achieving long-term efficacy. We believe that the genome-editing technologies currently utilized in the allogeneic cell therapy field have limited efficiency, specificity, and versatility for performing the multiplex editing necessary to address these challenges.

Genome-Editing Landscape and Limitations

There are several well-established genome-editing technologies being applied to generate immune cell therapies currently in preclinical research or clinical development, including zinc-finger nucleases, or ZFNs, transcription activator-like effector nucleases, or TALENs, and meganucleases, but each has limitations with respect to both their agility and their ability to generate site-specific gene insertions with high efficiency. More recently, clustered regularly interspaced short palindromic repeats, or CRISPR, genome-editing technology has been used for the generation of *ex vivo* immune cell therapeutics that are in preclinical research or clinical development.

The canonical CRISPR system utilizes Cas9, a protein that can cut genomic DNA. Cas9 is targeted to a specific site in a genome by a guide RNA. One of the drawbacks of CRISPR-Cas9 genome editing is the occurrence of off-target editing. Off-target edits can alter an oncogene or tumor suppressor gene, impact the biology of the target cell, or have other negative consequences on therapeutic development. Additionally, the simultaneous occurrence of both on-target and off-target edits may lead to genomic rearrangements including chromosomal translocations that may be problematic for immune cell therapeutics, especially for ones requiring multiple edits.

Our chRDNA Technology

We have invented a new CRISPR genome-editing platform, our chRDNA technology, which uses novel and proprietary hybrid guides for editing DNA, providing a powerful tool with the potential to expand the use of allogeneic cell therapies. The advantages of our technology include:

- *Significantly improved genome-editing specificity*: The use of our chRDNA guides leads to a high degree of editing specificity with lower levels of off-target events compared to first generation CRISPR-Cas9. See figure 6.

- *High efficiency*: We achieve a high degree of on-target gene knockout and insertion efficiency, facilitating robust multiplex editing including multiple gene insertions. See figure 6.

- *Versatility across a broad range of cell types*: Our chRDNA guides are compatible with multiple types of Cas proteins, including Cas9 and Cas12a, providing us the flexibility to apply our technology to many cell types including immune cells and stem cells.

- *Simple chemical synthesis*: Our chRDNA guides are manufactured via chemical synthesis using readily available technologies.

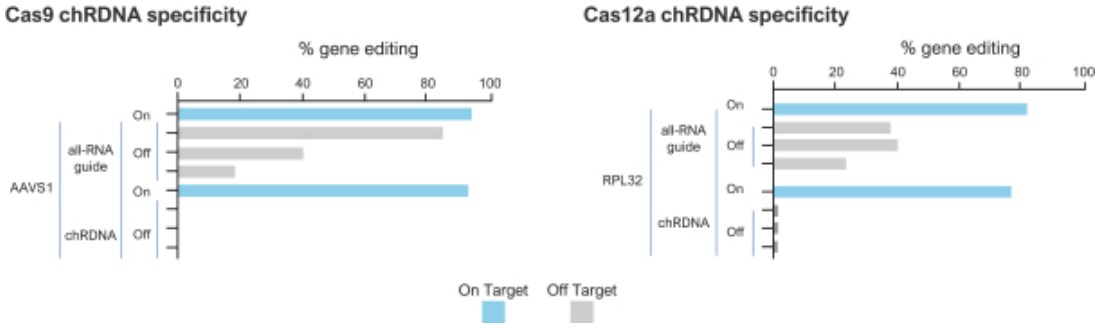

Figure 6. *chRDNA guides significantly improve genome-editing specificity relative to all-RNA guides. We edited the AAVS1 and RPL32 genes using either an all-RNA guide or a chRDNA guide targeting the same genomic location. In these cases the all-RNA guides result in multiple, high efficiency off-target edits, whereas the chRDNA guides yield minimal or undetectable off-target edits.*

We have successfully demonstrated multiplex genome editing with our chRDNA technology, including multiplex gene insertion. We believe this level of editing sophistication has the potential to unlock the broad use of allogeneic cell therapies by:

- *Increasing the persistence of allogeneic cell therapies, thereby potentially achieving long-term efficacy:* Our chRDNA technology enables us to apply multiple orthogonal approaches to armor allogeneic CAR-T cells, including (i) knockout of PD-1 to disrupt a pathway that leads to CAR-T cell exhaustion and (ii) immune cloaking CAR-T cells to prevent rapid rejection by the patient's immune system. See figure 7. Our preclinical mouse xenograft data demonstrate that the PD-1 knockout results in a significant survival advantage compared to conventional allogeneic CAR-T cells without a PD-1 knockout. See figure 8.

- *Improving the genomic integrity of our products*: We have observed that our product candidates have significantly lower levels of off-target edits compared to those made with first generation CRISPR-Cas9, and we believe we can make multiple edits while maintaining genomic integrity.

- *Expanding into solid tumors*: We are also focused on developing genome-edited, off-the-shelf CAR-NK cell therapies for the treatment of solid tumors. In our studies to date, we have observed that our chRDNA technology can precisely edit iPSCs and through a proprietary process, we generate genome-edited, iPSC-derived NK cells, or iNKs, that are armored to enhance efficacy, trafficking, targeting, and/or persistence.

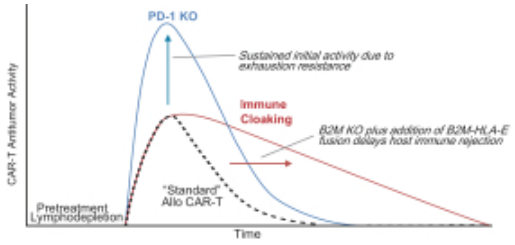

Figure 7*. We employ multiple armoring strategies to improve allogeneic CAR-T cell persistence.*

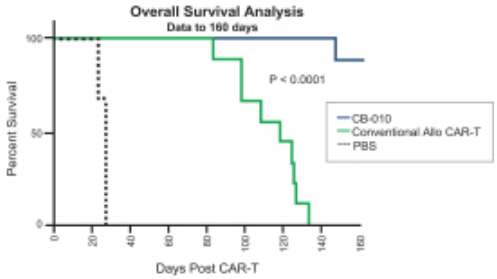

Figure 8*. In vivo preclinical mouse xenograft data demonstrate that the PD-1 knockout results in a significant survival advantage relative to a conventional allogeneic CAR-T cell therapy that expresses PD-1.*

Our Pipeline

Proprietary pipeline

Program	Cell type	Target	Editing	Indications	Discovery	IND enabling	Phase 1	Phase 2	Phase 3*	Anticipated milestones
CB-010	T cell	CD19	CAR into TRAC armoring: PD-1 KO	r/r B-NHL	●	●	●	○	○	initial data expected in 2022
CB-011	T cell	BCMA	CAR into TRAC armoring: B2M KO, B2M-HLA-E insertion	r/r MM	●	○	○	○	○	IND filing 2022
CB-012	T cell	CD371	armoring	r/r AML	●	○	○	○	○	IND filing 2023
CB-020	iNK cell	undisclosed	armoring	solid tumors	●	○	○	○	○	target selection 2022

* Phase 3 may not be required if phase 2 is registrational.

Figure 9. *Caribou is developing a robust oncology pipeline of immune cell therapies.*

CB-010

Our most developed product candidate is CB-010, an allogeneic anti-CD19 CAR-T cell therapy. See figure 10. We use Cas9 chRDNA guides to make three edits to manufacture CB-010. We introduce, with high efficiency and specificity, the gene encoding the CD19-specific CAR into the gene encoding the T cell receptor alpha constant, or *TRAC*, a component of the native T cell receptor, or TCR. This simultaneously integrates the CD19 CAR site-specifically into the T cell genome and eliminates TCR expression to reduce the risk of graft versus host disease, or GvHD. We also knock out the gene encoding the PD-1 protein in these cells to boost the persistence of CAR-T cell antitumor activity. We believe that the PD-1 knockout has the potential to reduce the likelihood of rapid tumor recurrence and potentially confer a better therapeutic index compared to other

allogeneic CAR-T cells. To our knowledge, CB-010 is the first allogeneic CAR-T cell therapy with a PD-1 knockout in clinical studies and it is being evaluated in our open-label, multicenter ANTLER phase 1 clinical trial in the United States in adults with relapsed or refractory B-NHL (NCT04637763). We have dosed the first patient in this clinical trial. We expect to have initial data from this clinical study in 2022.

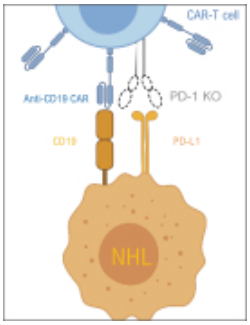

Figure 10. *CB-010 is a healthy donor leukapheresis-derived CAR-T cell targeting the CD19 tumor antigen.*

CB-011

CB-011 is an allogeneic, anti-BCMA CAR-T cell therapy for the treatment of relapsed or refractory MM. See figure 11. To our knowledge, CB-011 will be the first allogeneic CAR-T cell therapy immune cloaked to prevent both T- and NK-mediated clearance, or rejection, by the immune system. We expect our immune cloaking strategy to drive CAR-T cell persistence, enabling more durable antitumor activity. We use Cas12a chRDNA guides to make four edits to manufacture CB-011. We introduce the gene that encodes a novel and proprietary humanized anti-BCMA CAR into the *TRAC* locus with high specificity and efficiency, thus eliminating TCR expression to prevent GvHD and integrating the BCMA CAR site-specifically into the T cell genome. In addition, we insert a gene encoding a B2M–HLA-E fusion protein into the native *B2M* gene locus. This approach simultaneously prevents the expression of the native B2M protein, a protein that stabilizes all HLA class I antigens on the cell surface, thereby eliminating endogenous HLA class I presentation on the surface of the CAR-T cells, and stably expresses HLA-E, a minor HLA class I antigen, to blunt both T- and NK-mediated rejection of the CAR-T cell therapy by the patient's immune system. We expect to file an IND for this product candidate in 2022.

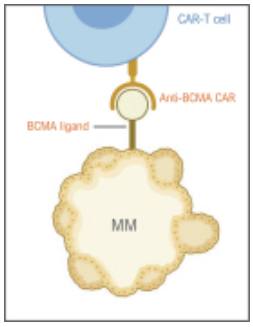

Figure 11. *CB-011 is a healthy donor leukapheresis-derived CAR-T cell targeting the BCMA tumor antigen. It is in the advanced discovery stage and will be developed for clinical evaluation in r/r MM.*

CB-012

CB-012 is an allogeneic, anti-CD371 CAR-T cell therapy for the treatment of relapsed or refractory AML. See figure 12. CD371 is expressed on the surface of AML tumor cells and leukemic stem cells, but it is not expressed on normal hematopoietic stem cells, which makes it a compelling target for the treatment of AML. We are applying our genome-editing expertise to armor the CB-012 CAR-T cell product candidate in order to drive persistence and seek maximum patient benefit in relapsed or refractory AML. We expect to file an IND for this program in 2023.

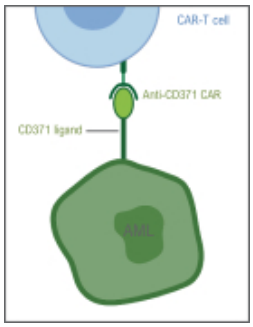

Figure 12. *CB-012 is a healthy donor leukapheresis-derived CAR-T cell targeting the CD371 tumor antigen. It is in the discovery stage and will be developed for clinical evaluation in r/r AML.*

CB-020

We believe that edited iNKs, including CAR-iNKs, hold significant potential for treating a variety of solid tumors. We have successfully demonstrated the ability to edit the genome of iPSCs at multiple loci and we have developed a robust differentiation protocol to derive iNKs from iPSCs, providing an optimal system for generating multiplex-edited iNKs that have the potential to address the fundamental challenges facing immune cell therapies in the immunosuppressive tumor microenvironment.

Our History

Our Team

Our team and our culture are critical to realizing our vision of advancing agile genome-editing innovations for the benefit of our communities. We were founded in 2011 by globally-recognized leaders in CRISPR and nucleic acid biology: Jennifer A. Doudna, Ph.D., who was a co-recipient of the 2020 Nobel Prize in Chemistry for the development of CRISPR-Cas9 as a method for genome editing; Martin Jinek, Ph.D., Assistant Professor at the University of Zurich in the Department of Biochemistry; James Berger, Ph.D., Professor in the Department of Biophysics and Biophysical Chemistry at the Johns Hopkins University School of Medicine; and Rachel E. Haurwitz, Ph.D., who has served as our President and Chief Executive Officer since our founding. Drs. Doudna and Jinek serve on our Scientific Advisory Board, or SAB, which also includes world experts in immuno-oncology therapeutics, T cell metabolism and tumor interactions, iPSC biology and differentiation, clinical trial development, and patient care.

We have attracted a talented group of experienced scientists, drug development experts, and company builders as part of a passionate team of over 65 employees. Throughout their combined careers, our team members have contributed to at least 49 IND submissions; 94 clinical trials, of which 40 were for oncology indications; 13 product approvals; and 11 product launches. Our research and development team includes scientists, engineers, and clinicians who are experts in genome-editing technologies, cellular engineering, computational biology, genome sequencing and analysis, structural biology, chemistry, lab automation, translational medicine, and the manufacturing of CRISPR reagents and cell therapies. Our team includes many of the scientists and engineers who invented the technologies we use today in our research and product development, including Paul Donohoue, a co-inventor of the chRDNA genome-editing technology, who continues to drive innovation as the leader of our platform discovery group.

We are driven by our shared values. We open our minds to new ideas and welcome diverse perspectives. We proudly assert that teams do their best work when their members are personally engaged, their ideas are taken seriously, their contributions are recognized, and their needs are met.

Our Values

- *Leaders in Genome Editing*: Passionate and relentless in our pursuit of innovation
- *Collaboration*: Shaping a better future together
- *Scientific Excellence*: Innovating solutions to advance scientific applications
- *Community Engagement*: Addressing society's needs through open dialogue
- *Integrity*: Operating with the highest level of integrity
- *Personal Development*: Empowering and supporting one another
- *Respectful and Inclusive*: Everyone is a necessary contributor to our success

Our Key Investors and our Financing History

Since our founding in 2011, we have raised approximately $150.1 million in net proceeds from equity capital invested by leading venture capital funds, healthcare-dedicated funds, other institutional investors, and strategic investors to advance our technology platforms and therapeutic pipeline. Our institutional investors include Adage Capital Partners, Anterra F&A Ventures, Avego Bioscience Capital, Avidity Partners, Invus, a fund affiliated with Farallon Capital Management, F-Prime Capital Partners Healthcare Fund IV LP, Heritage Medical Systems, Janus Henderson Investors, Life Sci Venture Partners, Maverick funds, Mission Bay Capital, Monashee Investment Management, funds affiliated with PFM Health Sciences, Point72, Ridgeback Capital Investments, Pontifax Global Food and Agriculture Technology Fund, and funds managed by Tekla Capital Management. Our corporate and strategic investors include AbbVie, DuPont, Genus, The Leukemia & Lymphoma Society Therapy Acceleration Program, and Novartis. Additionally, since our founding, we have received approximately $161.1 million from various licensing, collaboration, patent assignment, and service agreements as well as government grants, including approximately $88.4 million in net proceeds from the sale of Intellia Therapeutics, Inc., or Intellia, common stock received as consideration for our CRISPR-Cas9 license agreement with Intellia and $30.0 million received from AbbVie as an upfront payment for our collaboration and license agreement with AbbVie. Thus, to date, we have received a total of approximately $311.2 million in net proceeds from equity financings and contract revenues.

Intellectual Property

Since our founding in 2011, we have invented and acquired intellectual property covering chRDNA genome editing as well as additional genome-editing and cell therapy technologies. As of the date of this prospectus, we own 48 issued U.S. patents, including 7 U.S. patents covering our chRDNA technology; 218 issued foreign patents; and 85 pending patent applications throughout the world. Our portfolio includes granted U.S. patents covering methods and compositions relating to the anti-BCMA binding domain of our CB-011 product candidate. We have exclusively in-licensed intellectual property covering the anti-CD371 binding domains of our CB-012 product candidate from Memorial Sloan Kettering Cancer Center, or MSKCC. Additionally, we have extensive patent protection on CRISPR Type I systems, CRISPR-Cas9 methods and compositions, and other genome-editing technologies. Without any patent term extension, the earliest expiration dates of our granted U.S. patents are in 2032 and the latest expiration dates of our granted U.S. patents are in 2040. We also rely on trade secrets to protect aspects of our manufacturing that are not amenable to patent protection or infringement detection. We seek to protect these trade secrets and other proprietary technology, in part, by entering into confidentiality agreements with parties who have access to them. We also enter into confidentiality and invention assignment agreements with our employees and our agreements with consultants include invention assignment obligations.

Under an exclusive license agreement with The Regents of the University of California, or UC, and the University of Vienna, or Vienna, we have a worldwide license, with the right to sublicense, in all fields to the foundational CRISPR-Cas9 patent family co-owned by UC, Vienna, and Dr. Emmanuelle Charpentier, or the CVC IP. To date, we have entered into over 20 sublicensing agreements with third parties under which we granted rights to the CVC IP and other Cas9 intellectual property owned or controlled by us in a variety of fields such as human therapeutics, agriculture, research reagents, transgenic animals, certain livestock targets, internal research, bioproduction, cell lines, microbial applications, and forestry.

As of the date of this prospectus, our trademark portfolio contains 12 trademark registrations, including four U.S. trademark registrations. We have registered "CARIBOU," "CARIBOU BIOSCIENCES," and the Caribou logo as trademarks in relevant classes and jurisdictions in the United States, European Union, and United Kingdom.

Manufacturing

We have built an efficient and scalable manufacturing process, and our process development organization works with several selected contract manufacturing organizations, or CMOs. Our allogeneic CAR-T cell approach utilizes healthy donor T cells, which we believe provides an enhanced and more cost-effective manufacturing process compared to autologous CAR-T cell manufacturing. In addition, we have optimized the process to achieve a high level of cell recovery and activity through enhanced culture conditions, timing, early stage of differentiation, and use of qualified materials. We have developed analytical methods to ensure high integrity of the CAR-T cells based upon our manufacturing process and quality controls. Furthermore, we will be initiating process development to manufacture iPSCs (adult somatic cells genetically reprogrammed to a stem cell-like state) that will enable us to develop genome-edited, iPSC-derived CAR-NK cell therapeutics for targeting solid tumors.

We rely on CMOs for the manufacture of our product candidates for clinical use, and most of these CMOs have demonstrated capability in preparation of materials for commercialization. We conduct our own process development internally prior to transferring our methodologies to the CMO that manufactures our cGMP cell products. We may build our own manufacturing facility in the future to provide us greater flexibility and control over our clinical and/or commercial manufacturing needs.

Our Strategy

Our purpose is to develop transformative genome editing-based therapies for devastating human diseases. Our goal is to build an integrated company that discovers, develops, manufactures, and commercializes genome editing-based therapies that hold the potential to significantly impact a wide range of diseases.

Key components of our strategy include:

- *Applying our chRDNA platform to the clinically evaluated cell-surface targets CD19 and BCMA to develop allogeneic CAR-T cell therapies with improved persistence of antitumor activity.* We are advancing clinical development of our lead product candidate, CB-010, for relapsed or refractory B cell non-Hodgkin lymphoma as well as research and development for our preclinical product candidate, CB-011, for relapsed or refractory MM. Both product candidates are focused on targets that have been validated in the autologous CAR-T cell therapeutic setting, CD19 and BCMA respectively, providing us appropriate indications with limited target risk in which to evaluate the role of boosted allogeneic CAR-T cell antitumor persistence. CB-010 is being evaluated in our ANTLER phase 1 clinical trial with initial data expected in 2022.

- *Developing additional allogeneic CAR-T cell product candidates for the treatment of hematologic malignancies.* Immune cell therapies have emerged as an exciting and powerful approach for difficult-to-treat hematologic malignancies in patients with limited treatment options. We are applying our chRDNA platform and insights from our more developed programs to create allogeneic CAR-T cell therapies against targets for diseases such as AML, and we plan to use multiple armoring strategies to enhance the persistence and efficacy of our product candidates.

- *Expanding our cell therapy pipeline to include cell therapies for the treatment of solid tumors and metastases by leveraging our iNK cell therapy platform.* We believe NK cells are a promising cell type for the treatment of solid tumors and metastases. We have developed the ability to edit iPSCs and differentiate them into NK cells that have antitumor potential. We intend to pursue targeting multiple types of solid tumors for which there is high unmet medical need.

- *Reinforcing our leadership in CRISPR genome editing through strategic investments in our platform and new technologies.* Our company was founded by leaders in CRISPR biology and its development for use as a platform to generate therapeutics. Our foundation is based on science and innovation protected by a robust IP portfolio and we will continue to invest in and build up these areas to maintain our prominence in the field and to develop therapies in which our genome edits confer potential benefits to patients.

- *Further expanding patient access to our cell therapies via selective strategic collaborations, such as our collaboration with AbbVie.* We executed a strategic license and collaboration agreement with AbbVie in February 2021 to develop two allogeneic CAR-T cell therapies using our Cas12a chRDNA genome-editing and cell therapy technologies. In the future, we may seek additional opportunities with select collaborators as appropriate to accelerate our ability to develop therapeutics to address significant unmet medical need.

- *Pursuing indications both within and outside of oncology on our own and through selective strategic collaborations.* We believe that our technology has broad potential to generate gene and cell therapies in oncology and in therapeutic areas beyond oncology including immune cell therapies, cell therapies derived from genome-edited iPSCs, and *in vivo* genome-editing therapies. We aspire to maximize the value of our technologies and capabilities for patient benefit through internal investment and development and through collaborations.

Cell Therapies for Cancer

Overview of Immune Cell Therapies

Immune cell therapies have emerged as an exciting and powerful approach for difficult-to-treat hematologic malignancies in patients with limited treatment options. These therapies capitalize on the immune system's natural ability to detect and kill tumor cells.

Within the immune system, white blood cells, such as T cells and NK cells, are responsible for defending the body against not only pathogens but also abnormal cells, including cancer cells. Receptors on the surface of T cells enable them to recognize tumor cells and coordinate the activation of other cells in an immune response leading to the destruction of the cancerous cells. However, in many cases, cancer-specific T cells are not present in sufficiently high numbers or do not have the appropriate tumor specificity in a patient to eliminate a tumor.

Autologous immune cell therapies, the most advanced of which use T cells, are a class of therapies in which immune cells are removed from a patient's body and modified to express chimeric antigen receptors, or CARs. CARs are engineered molecules that, when present on the surface of an immune cell, enable the immune cell to recognize specific proteins, or antigens, that are present on the surface of other cells, including cancer cells. To manufacture autologous CAR-T cell therapies, a cancer patient's own T cells are modified to express a particular CAR, grown outside the patient's body to expand their numbers, and then infused back into the same patient to recognize and destroy cancer cells in a targeted manner.

The approval and launch of first generation CD19- and BCMA-directed, autologous CAR-T cell products have laid the foundation and opened a path for the development of more advanced cell therapeutics. The

clinical response rates observed with these therapies were unprecedented, leading to their approval for commercialization based on pivotal, single-arm, phase 2 clinical trials.

Opportunity for Allogeneic Therapies

Despite the successes of autologous CAR-T cell therapies, several limitations have prevented autologous therapies from achieving the full potential of CAR-T products:

- *Limited patient access*. Many patients are not eligible for autologous therapy due to the quality of their T cells or the lengthy vein-to-vein time. Long wait times between the initial collection of the patient's T cells and the return of the modified cells back to the patient often require a difficult intervening bridging treatment.

- *Manufacturing complexity.* Autologous cell manufacturing is complex and lengthy and there are occasional manufacturing failures. The consequence of a manufacturing failure is that a patient might never receive their treatment.

- *Variable potency.* Often patients' T cells can be damaged and weakened due to prior cancer treatments, which may lead to variable potency of the manufactured T cells and variability in outcomes of the therapy.

- *High production costs*. Due to the personalized nature of autologous therapy, as only one patient can be treated from each manufacturing run, the supply chain logistics including manufacturing and delivery result in high costs with limited ability to scale.

Universal off-the-shelf, or allogeneic, versions of CAR-T or CAR-NK cells derived from healthy donors are attractive options for several reasons.

- *Potential for high response rates.* Allogeneic therapies are produced from selected and screened T cells of healthy donors resulting in enhanced cell consistency, potency, and potentially more predictable treatment outcomes.

- *Off-the-shelf availability.* Allogeneic CAR-T cells are manufactured in advance, are stored in inventory, and are available for any eligible patient at any time. Compared to autologous therapies, there is a significantly shortened waiting time, without the need for bridging therapy. In addition, allogeneic cell therapies offer the opportunity for repeated dosing in patients with significant tumor burden.

- *Broad access*. Allogeneic therapies derived from healthy donor cells have the potential to provide therapeutic options for patients who are ineligible for autologous CAR-T cell treatments due to the condition of their T cells.

- *More efficient and cost-effective manufacturing*. Allogeneic approaches utilize cells from healthy donors resulting in a streamlined manufacturing process, enhanced scalability, and cost reduction.

Current Challenges in Allogeneic Cell Therapies

Although allogeneic cell therapy is positioned to unlock the broader potential of engineered immune cells as a leading therapeutic modality, it has not yet achieved the efficacy of autologous therapies. We believe that the expansion and persistence of allogeneic CAR-T cells are critical to achieving long-term efficacy. Unlike autologous CAR-T cell therapies, allogeneic CAR-T cell therapies are prone to rapid rejection by a patient's immune system, thus limiting antitumor activity. Additionally, CAR-T cell therapies have not demonstrated significant and

reproducible efficacy in solid tumors to date. While multiple CAR-T cell approaches are being evaluated in clinical trials for the treatment of solid tumors, the efficacy observed to date is limited and lower than that observed when treating hematologic malignancies. This may be due to poor CAR-T cell trafficking and infiltration into tumors and metastases, and their limited antitumor function within the immunosuppressive tumor microenvironment.

Persistence is the Key to Unlocking the Full Potential of Allogeneic Cell Therapies

We believe greater persistence is necessary for the realization of the full potential of allogeneic cell therapies, as shown in figure 7. CAR-T cells will generally proliferate in response to tumor antigen engagement via their respective CAR. However, allogeneic CAR-T cells are rapidly rejected by a patient's immune system due to their genetically divergent donor-derived immune profile.

Data from patients treated with autologous CAR-T cell therapies suggest that sustained, longer-term remission is associated with the persistence of CAR-T cells. We believe that allogeneic cell therapies must persist in either their antitumor activity before exhaustion or remain in circulation within a patient's bloodstream and lymphatics for an extended period of time, or both, to meaningfully compete with the response rates of autologous cell therapies.

Development of an allogeneic CAR-T cell therapy requires genome editing to remove proteins from donor T cells that may recognize and attack a patient's tissue that, without removal, would pose a risk of graft versus host disease, or GvHD. Further, the donor T cells will express surface proteins that signal that they are "foreign" to the patient's immune system such that they are rapidly rejected by the patient's immune system. We believe allogeneic CAR-T cells must be modified via genome editing to enable them to safely and sufficiently persist to provide therapeutic benefit to rival the response rates of autologous CAR-T cells.

Our Approach: Armor Cell Therapies to Increase the Persistence of Antitumor Activity

We believe that improving CAR-T cell persistence is the key to long-term efficacy in the allogeneic setting. Our strategy to improve CAR-T cell persistence is two-fold: (i) knock out PD-1 to significantly reduce CAR-T cell exhaustion and/or (ii) immune cloak the CAR-T cells to prevent rapid rejection by the patient's immune system. Similar strategies may be used for our CAR-NK platform where persistence will be key for long-term duration of antitumor activity.

PD-1 Knockout Strategy

One of the approaches we deploy to increase the persistence of CAR-T cell antitumor activity is to remove PD-1 from the CAR-T cell surface. The PD-1/PD-L1 pathway leads to rapid exhaustion in T cells. This occurs when a T cell expressing PD-1 engages with another cell expressing PD-L1. Tumor cells and the patient's own cells can express PD-L1, leading to interaction with PD-1 and subsequent exhaustion of the CAR-T cells. We use our chRDNA technology to knock out the PD-1 gene and eliminate PD-1 expression from the CAR-T cell surface, thereby preventing PD-1/PD-L1-mediated exhaustion. We believe that knocking out PD-1 will maintain the CAR-T cells in a higher antitumor state for a longer period of time, and we believe this will result in greater initial tumor debulking in the patient which will lead to long-term durability of CAR-T cell antitumor activity. As shown above in figure 8, our preclinical *in vivo* data from experiments conducted in mouse xenograft models submitted as part of our CB-010 IND demonstrate that knocking out PD-1 leads to a significant increase in the durability of antitumor activity and therefore overall mouse survival. To our knowledge, our lead product candidate is the first allogeneic CAR-T cell therapy in a clinical study with a PD-1 knockout, and we believe will drive the durability of allogeneic CAR-T cell antitumor activity.

Immune-Cloaking Strategy

Another approach we deploy to increase the persistence of CAR-T cell antitumor activity is to immune cloak our CAR-T cells to prevent rapid immune-mediated rejection. The goal of immune cloaking is to maintain

the allogeneic CAR-T cells in circulation for a longer period of time. Allogeneic CAR-T cells are foreign to the patient's immune system and, unless modified, will be rapidly rejected. We use our chRDNA technology to make multiple edits to T cells to immune cloak them and prevent rapid rejection by both the patient's cytotoxic T cells and NK cells. Our edits remove all endogenous HLA class I antigens from the CAR-T surface and lead to the overexpression of HLA-E, a minor antigen, on the CAR-T cell surface. The lack of endogenous HLA class I antigens and the presence of only HLA-E prevent the patient's T cells and NK cells from rapidly rejecting the allogeneic therapy. These cells are unlikely to persist indefinitely, and ultimately other types of immune cells in the patient will eliminate the allogeneic CAR-T cells. Our edits are designed to maintain the CAR-T cells in circulation longer in order to drive the persistence of the CAR-T cell product and to destroy a larger proportion of the targeted tumor cells**.**

Genome-Editing Landscape and Limitations

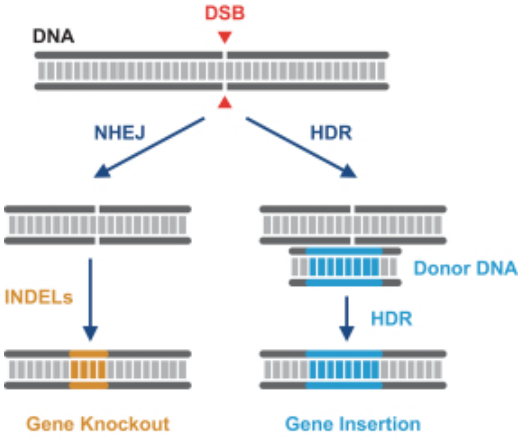

Figure 13. *Genome editing is initiated by generating a double-stranded break, or DSB, in chromosomal DNA at a desired location. The cell will seal the break by an error-prone process called non-homologous end joining, or NHEJ, leading to the formation of insertions and deletions, or indels, resulting in a site-specific gene knockout. If a donor DNA template is provided to the cell during genome editing that encodes a gene of interest, a process called homology-directed repair, or HDR, will result in the insertion of the donor DNA in a site-specific manner.*

Genome editing is a class of technologies that facilitate making specific changes to DNA sequences inside living cells. Genome editing occurs in two steps. In the first step, a double stranded break, or DSB, is made at the location of the genome where the edit is desired. A cell typically has two ways to repair the DSB, which result in the knockout of a gene or the insertion of new genetic material: non-homologous end joining, or NHEJ, and homology-directed repair, or HDR. NHEJ is an error-prone process in which the broken DNA ends are reattached. During NHEJ, the cell typically inserts or deletes a few nucleotides at the DSB. These insertions and deletions, or indels, destroy the coding sequence for the targeted gene, resulting in the knockout of the targeted sequence. HDR, by contrast, is a more controlled repair system where the cell incorporates donor DNA delivered during the experiment into the DSB, resulting in the site-specific insertion of the provided DNA sequence. See figure 13.

There are several well-established genome-editing technologies being applied to generate immune cell therapies currently in preclinical research or clinical development, including zinc-finger nucleases, or ZFNs, transcription activator-like effector nucleases, or TALENs, and meganucleases, but each has limitations with respect to both their agility and their ability to generate site-specific gene insertions with high efficiency. More recently, CRISPR genome-editing technology has been used for the generation of *ex vivo* immune cell therapeutics that are in preclinical research or clinical development.

The canonical CRISPR system utilizes Cas9, a protein that can cut genomic DNA. Cas9 is targeted to a site in a genome by a single- or dual-guide RNA. The guide RNA contains 20 nucleotides at the 5' end of the guide that are programmed to match the chromosomal DNA sequence selected for genome editing. One of the drawbacks of CRISPR-Cas9 genome editing is the occurrence of off-target editing. Off-target edits can alter an oncogene or tumor suppressor, impact the biology of the target cell, or have other negative consequences on therapeutic development. Additionally, the simultaneous occurrence of both on-target and off-target edits may lead to genomic rearrangements including chromosomal translocations that may be problematic for immune cell therapeutics, especially for ones that require multiple edits.

Our CRISPR Hybrid RNA-DNA Technology

Our chRDNA Guides

Our chRDNA technology uses the canonical *S. pyogenes* Cas9 protein or the *Acidaminococcus sp.* Cas12a protein and a guide that is composed of both RNA and DNA nucleotides termed **C**RISPR **h**ybrid **R**NA-**DNA**, or chRDNA, pronounced "chardonnay." chRDNA guides contain a mixture of RNA and DNA nucleotides in both the region that interacts with the chromosomal target DNA and in the region that does not interact with the target DNA. The presence of DNA in a chRDNA guide significantly improves editing specificity relative to an all-RNA guide. See figure 14. Like Cas9, Cas12a is a CRISPR protein used to edit genomic DNA site-specifically. See figure 15. We have developed the chRDNA guides to achieve the following advantages:

- Highly specific on-target genome editing;
- Equivalently high gene knockout efficiencies compared to conventional all-RNA guides;
- Cas12a chRDNA-mediated editing drives high efficiency gene insertions; and
- Multiplex editing with reduced risk of chromosomal translocations via our proprietary delivery technology.

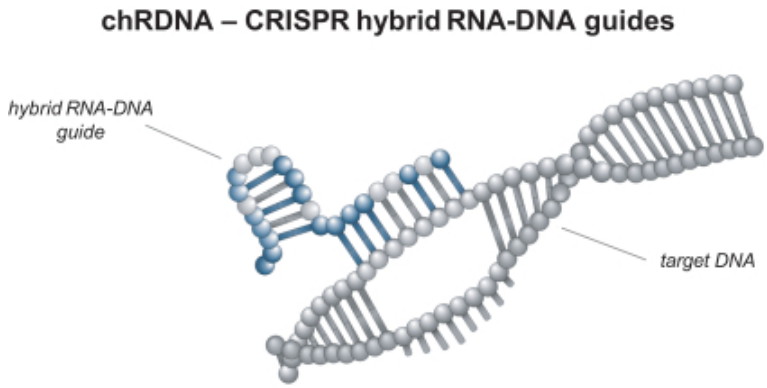

Figure 14. *Our chRDNA guides are hybrid molecules that contain both RNA and DNA nucleotides. They enable significantly improved specificity compared to first generation all-RNA guides.*

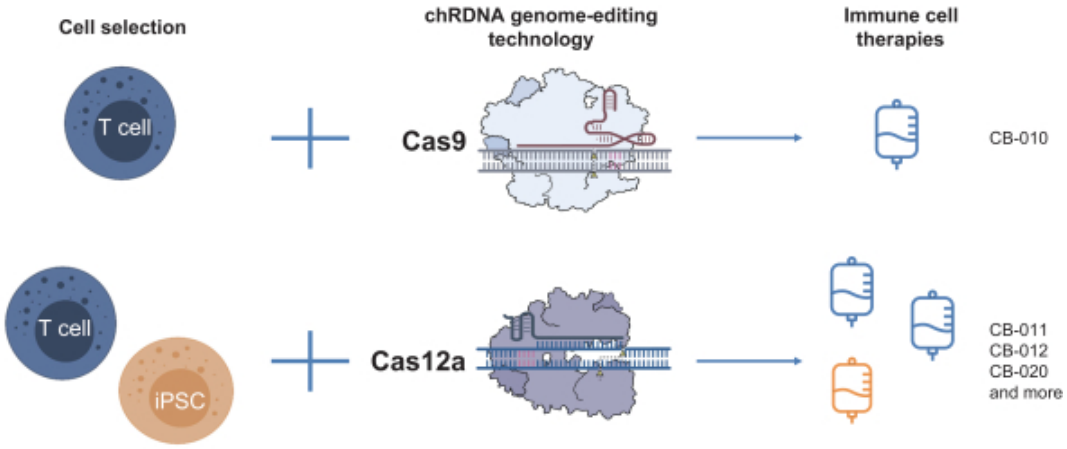

Figure 15. *We use Cas9 and Cas12a in the development of our allogeneic cell therapies.*

Our chRDNA Guides: Highly Specific On-Target Genome Editing

Our chRDNA guides mediate significantly more specific genome editing than all-RNA guides. We hypothesize that the presence of DNA in a chRDNA guide improves the specificity of genome editing by decreasing the affinity of a Cas9 chRDNA complex or a Cas12a chRDNA complex for target genomic DNA. A chRDNA guide retains sufficiently high affinity to edit a genome at the intended location. However, a chRDNA guide has sufficiently low affinity for potential off-target sites to reduce the likelihood of a genome edit at an unintended location. We evaluated the integrity and performance of chRDNA guides by employing two proprietary assays, the SITE-Seq assay and the VINE methodology, on two genes known from the scientific literature to suffer from high rates of off-target editing with either the Cas9 or Cas12a protein. As seen in figure 16 below, all-RNA guides generated both robust on-target and off-target editing. We developed chRDNA guides that target the exact same genomic locations that achieve equivalent on-target editing compared to the all-RNA guides. However, the chRDNA guides, in contrast to the all-RNA guides, result in little to no detectable off-target editing. For any single genome edit, the chRDNA platform provides high specificity for use in our product candidates. We have generated chRDNA guides for Cas9 and for Cas12a targeting multiple distinct locations in the human primary T cell genome that lead to high efficiency and high specificity editing, and an example is shown in figure 6 above.

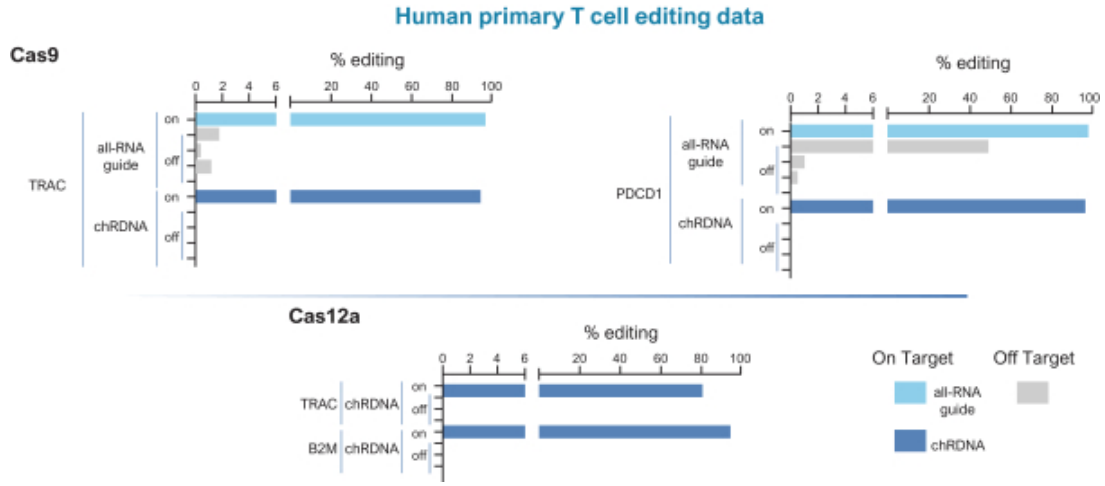

Figure 16. *Our chRDNA guides yield significantly increased editing specificity compared to all-RNA guides with either Cas9 or Cas12a.*

Our chRDNA Guides: Achieve Equivalent, High Gene Knockout Efficiencies Compared to Conventional all-RNA Guides

The inclusion of DNA in our chRDNA guides does not impair their activity, and they can achieve knockout efficiencies in human primary T cells with either the Cas9 or Cas12a protein that are equivalent to the knockout efficiencies achieved with all-RNA guides.

Our chRDNA Guides: Cas12a chRDNA-Mediated Editing Drives High Efficiency Gene Insertions

One of the challenges in the genome-editing field is obtaining a high degree of site-specific gene insertion. High efficiency gene knockout is achievable with a variety of genome-editing technologies, but achieving high efficiency gene insertion is more challenging. Either Cas9 or Cas12a can be used to insert a new gene into a genome. We use the combination of the Cas12a protein and our chRDNA guides to generate particularly high and reproducible gene insertion rates. Gene insertion requires delivery of the new gene into the target cells. To insert genes into T cells with our chRDNA technology, we transduce the cells with an engineered adeno-associated virus serotype 6, or AAV6, which contains the DNA template of interest to facilitate the integration of the DNA into the double-stranded break generated by the Cas9 chRDNA complex or the Cas12a chRDNA complex via the homology-directed repair pathway.

As shown in figure 17 below, approximately 60-75% gene insertion rates were achieved in human primary T cells edited with Cas12a chRDNAs, a significant rate that is competitive with other genome-editing platforms. We demonstrated the insertion of a B2M–HLA-E fusion gene, or Insert 1, into the *B2M* locus by staining the edited T cells for the expression of HLA-E following the knockout of all class I antigens via a *B2M* knockout and the insertion of the B2M–HLA-E fusion gene into the *B2M* locus. In the same T cells, we demonstrated the insertion of a BCMA-specific CAR transgene, or Insert 2, into the *TRAC* locus by staining the edited T cells for the expression of the CAR following the knockout of the T cell receptor, or TCR, via a *TRAC* knockout and the insertion of the CAR transgene into the *TRAC* locus. Cas12a chRDNA-mediated gene insertion rates are sufficiently high to enable multiplex insertions in the manufacture of some of our product candidates. For example, we implement two separate insertions in the manufacture of CB-011: an insertion of the BCMA-specific CAR transgene into the *TRAC* locus and an insertion of the B2M–HLA-E fusion gene into the *B2M* locus.

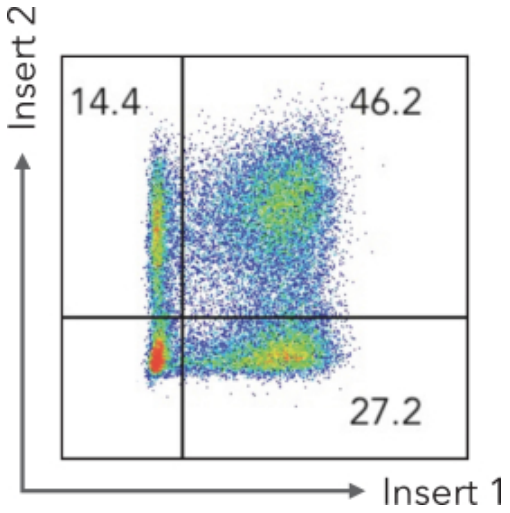

Figure 17. *Our Cas12a chRDNA technology mediates high rates of site-specific insertion. High efficiency Cas12a chRDNA editing yields ~46% of the modified T cells possessing 2 gene inserts and 2 gene knockouts, thus all 4 desired edits.*

Our chRDNA Guides: Capable of Multiplex Editing with Reduced Risk of Chromosomal Translocations via Our Proprietary Delivery Technology

By combining our chRDNA guides together with our proprietary delivery technology, we believe we are positioned to generate immune cell therapy product candidates with a higher degree of genomic integrity. High genomic integrity is crucial to ensuring that patients are not infused with immune cells harboring the potential for tumorigenicity or that have impaired function. The cell therapy product candidates we are developing include multiple genetic changes. For example, the CB-010 product candidate has edits at both the *TRAC* and *PDCD1* genes. In an effort to maintain the genomic integrity of our T cells after multiple editing events, we employ a proprietary delivery technology that relies on delivery parameters via electroporation for the introduction of Cas proteins and chRDNA guides into human primary T cells. Through this delivery technology, we minimize the generation of chromosomal translocations and genomic rearrangements that may result from multiple genome edits. Multiplex editing in T cells with different genome-editing technologies, such as TALENs or CRISPR-Cas9, using standard delivery technologies leads to 2-5% of the T cells containing chromosomal translocations or other genome rearrangements. As shown in figure 18 below, if we use the standard electroporation delivery technology commonly utilized for *ex vivo* cell therapy manufacturing, we observe >3% translocation rates when performing two genome edits. In contrast, when using our proprietary delivery technology, the translocation rate is reduced by more than an order of magnitude.

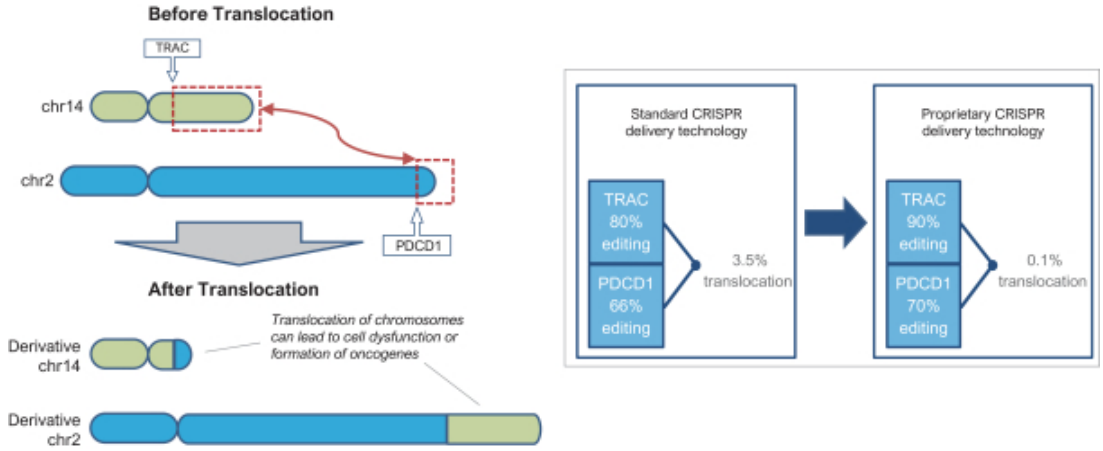

***Figure 18**. Our proprietary delivery technology maintains the genomic integrity of our cellular therapies by significantly reducing the rates of chromosomal translocations.*

Portfolio Product Candidates: Design, Rationale, and Indications

CB-010

Overview: Strategy and Rationale

Our most developed product candidate is CB-010, a healthy donor-derived, genome-edited, allogeneic CAR-T cell therapy targeting CD19-positive malignancies, is being evaluated in the first-in-human, open-label, multicenter ANTLER phase 1 clinical trial (NCT04637763) in the United States in adults with relapsed or refractory B-NHL. CB-010 is designed to reduce the loss of antitumor activity and confer a better therapeutic index compared to other allogeneic CAR-T cells. To manufacture CB-010, we make three modifications to healthy donor-derived T cells using our Cas9 chRDNA genome-editing technology:

- *TRAC knockout*: We knock out the *TRAC* gene in order to eliminate expression of the T cell receptor, or TCR, from the surface of the CAR-T cells. The removal of TCR expression is intended to eliminate the risk of graft versus host disease, or GvHD, in patients.

- *Site-specific insertion of the anti-CD19 CAR:* We insert the CD19-targeted CAR into the *TRAC* gene by AAV6 transduction and homology directed repair. We believe site-specific insertion of the CAR has advantages compared to random integration mediated by lentiviral or retroviral insertion. For example, random integration leads to the risk of unintended gene disruption which is avoided via site-specific insertion. The insertion of the CAR yields a cell product that exhibits CD19-specific cytotoxicity.

- *PD-1 knockout:* We knock out PD-1, a checkpoint receptor, in order to improve the persistence of CAR-T cell antitumor activity in an "off-the-shelf" setting.

The PD-1/PD-L1 pathway leads to rapid exhaustion in T cells. This occurs when a T cell expressing PD-1 engages with another cell expressing PD-L1. B cell tumors and the patient's own cells can express PD-L1, leading to interaction with PD-1 and subsequent exhaustion of the CAR-T cells. We eliminate PD-1 expression from the CB-010 CAR-T cells, thereby preventing PD-1/PD-L1-mediated exhaustion. More than half of B-NHL tumors express PD-L1, and expression of PD-L1 in B-NHL correlates with poorer outcomes. We believe that knocking out PD-1 will maintain the CAR-T cells in a higher antitumor state for a longer period of time, and we

believe this will result in greater initial tumor debulking in the patient and thereby better long-term durability of the CAR-T cell antitumor activity. To our knowledge, CB-010 is the first allogeneic CAR-T therapy in the clinic with a PD-1 knockout. Other CAR-T cell therapies that express endogenous PD-1 could become rapidly exhausted and lose antitumor activity due to the interaction between PD-1 and PD-L1.

Figure 19 below graphically depicts CB-010 CAR-T cells lacking expression of PD-1 interacting with a CD19-expressing tumor cell that expresses PD-L1 on its surface. The lack of interaction between PD-L1 on a tumor cell and the CB-010 CAR-T cell eliminates the induction of the PD-1 checkpoint pathway in the T cells that would otherwise lead to their exhaustion.

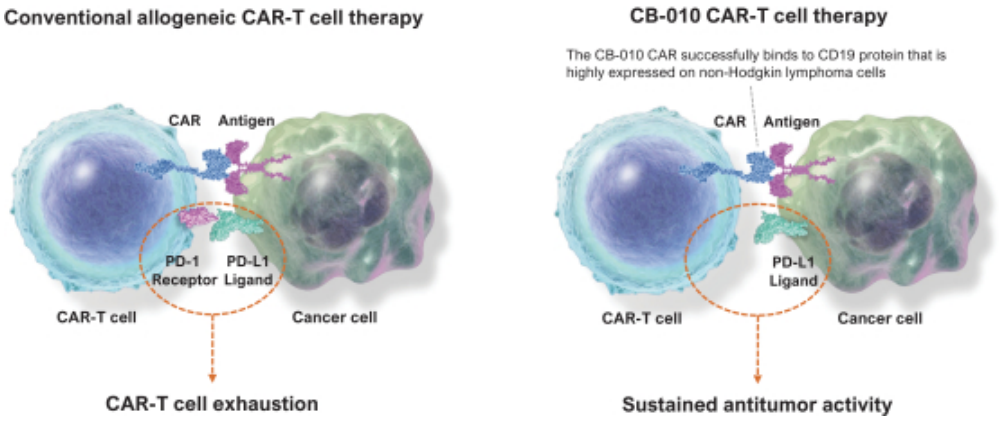

Figure 19. *Cancer cells use the PD-1/PD-L1 signaling pathway to evade immune cells and avoid destruction. The PD-L1 ligand on the tumor cell surface binds to the PD-1 receptor on the conventional allogeneic CAR-T cell, limiting the CAR-T cell's killing ability. CB-010 cells lack PD-1 on their surface and therefore are insensitive to PD-L1 expression. CB-010 cells are designed to maintain high antitumor activity for an extended duration.*

Target Indication

We are developing CB-010 for the treatment of relapsed or refractory B-NHL. Non-Hodgkin lymphoma is the most common hematologic malignancy with an estimated 81,560 cases or 4% of all cancers diagnosed in the United States in 2021, as reported by the American Cancer Society. B-NHL makes up 80 to 85% of those non-Hodgkin lymphoma cases.

B-NHL is a heterogeneous malignancy that is monoclonal in nature and arises in lymphocytes. The disease can often be traced to specific stages in lymphoid maturation. Most malignant lymphocytes derive from mature B cells or from lymphocytes of germinal center origin. The malignant cells have acquired the ability to proliferate, evade the host immune response, and avoid cellular apoptosis.

Overall, for aggressive relapsed or refractory B-NHL, newer immunologically-mediated therapies under investigation include checkpoint inhibitors and CAR-T cells. FDA approved autologous CD19-specific CAR-T cell therapies have shown significant complete response rates, progression-free survival, and overall survival. Despite the clinical benefits of these approved autologous CAR-T therapies, they are expensive and challenging to manufacture and many patients are ineligible, cannot wait the long vein-to-vein time, and may require bridging therapy. Thus, there remains significant unmet medical need in B-NHL.

Clinical Development Plan

CB-010 is undergoing evaluation in our first-in-human, open-label, multicenter ANTLER phase 1 clinical trial (NCT04637763) for the treatment of adult subjects with aggressive forms of relapsed or refractory B-NHL. The patient population will include individuals for whom at least two lines of chemo and/or immunotherapy have failed and who have not received CD19-targeted therapy previously. The patient population in the trial includes the following aggressive B-NHL subtypes: diffuse large B cell lymphoma, or DLBCL; high grade B cell lymphoma, or HGBL; transformed follicular lymphoma, or tFL; primary mediastinal large B cell lymphoma, or PMBCL; follicular lymphoma, or FL; marginal zone lymphoma, or MZL; and mantle cell lymphoma, or MCL. We have dosed the first patient in this clinical trial.

Patients in our ANTLER phase 1 clinical trial will receive a chemotherapy regimen prior to CAR-T cell infusion. The chemotherapy regimen includes two agents, cyclophosphamide and fludarabine, which are generally used for lymphodepletion prior to autologous CAR-T cell therapy. To ensure optimal engraftment of the allogeneic CB-010 cells, we will use a more intense regimen of these chemotherapeutic agents than has been previously used with CAR-T cell therapies. Our lymphodepletion regimen will provide better treatment flexibility so that the dosing may be modified to suit the patient's tolerance to the chemotherapy. We are adapting our lymphodepletion protocol from one previously described by investigators at the National Institutes of Health that they used in multiple clinical trials. The increased intensity refers to both the amount of each agent used and the timing of dosing. The primary objectives of the trial include the incidence of adverse events defined as dose-limiting toxicities after CB-010 infusion, the overall response rate, and the identification of the recommended phase 2 dose, or RP2D. See figure 20.

Our ANTLER phase 1 clinical trial is being conducted in two parts and we estimate enrolling up to approximately 50 patients across multiple centers in the United States. Part A is a dose escalation following a standard 3 + 3 design, with sequential, prespecified, increasing doses of CB-010. Part B is the expansion portion where patients will receive CB-010 at the dose determined in Part A. We expect to have initial data from this clinical trial in 2022.

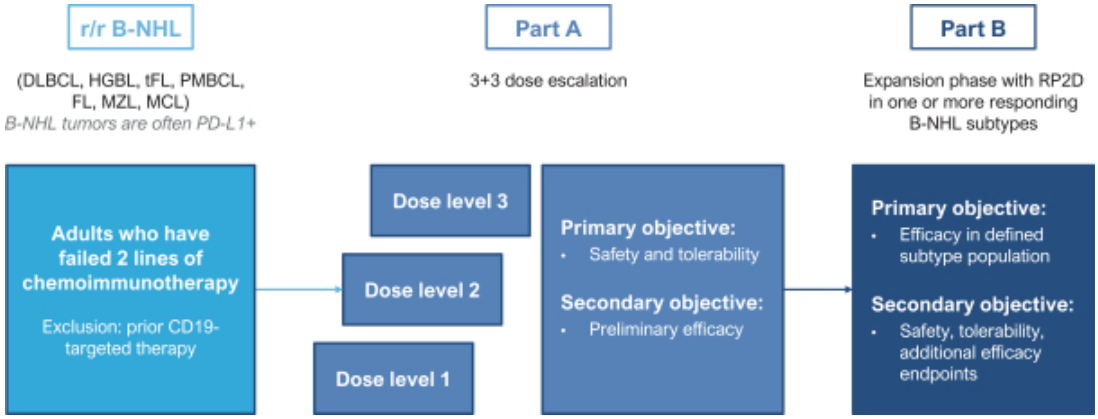

Figure 20. *Our ANTLER phase 1 clinical trial is designed to evaluate CB-010 in relapsed or refractory B-NHL lymphoma patients. It is an open-label phase 1 trial expected to enroll up to approximately 50 participants in total. The study will be conducted in two parts: Part A is a dose escalation with a 3 + 3 design, with sequential, prespecified, increasing doses. Part B is an expansion portion where patients will receive CB-010 at the recommended phase 2 dose, or RP2D, determined in Part A.*

Preclinical Data

In our preclinical studies, we demonstrated that the removal of the PD-1 checkpoint from the CB-010 CAR-T cells provided a statistically significant survival advantage in mice bearing robust and metastatic B cell tumors. In an effort to evaluate the impact of the PD-1 knockout on CB-010 CAR-T cell exhaustion and antitumor activity, we compared CB-010 CAR-T cells to conventional allogeneic CD19 CAR-T cells that express PD-1 in a long-term established tumor xenograft model. We engrafted immunodeficient mice in an orthotopic manner (by intravenous injection to ensure distribution within the bloodstream, lymphatics, and bone marrow) with the acute lymphocytic leukemia, or ALL, tumor model NALM-6 that expresses PD-L1. We allowed the tumors to engraft in the mice for 23 days to ensure that the tumors were metastatic to reflect the human condition with B-NHL. Once the tumors were well-established and metastatic, we treated the mice in three separate groups with the following different materials:

- Phosphate-buffered saline, or PBS, a negative control;
- Conventional allogeneic CD19 CAR-T cells, T cells with the anti-CD19 CAR used in CB-010 inserted into the *TRAC* locus, but without the PD-1 knockout; and
- CB-010.

As shown in figure 21 below, all of the mice had robust tumor burden after 23 days of tumor engraftment as shown by imaging (color bar indicates more tumor growth, from blue to red). On day 0, each cohort of animals received a single dose of either PBS, the conventional allogeneic CD19 CAR-T cells, or CB-010 cells. By day 14 following dosing (D14 post CAR-T), animals that received PBS had become more metastatic, whereas both CD19-specific CAR-T cell therapies had eradicated the established tumors. Following initial tumor clearance, the animals treated with the conventional allogeneic CD19 CAR-T cell therapy experienced a rapid recurrence of their tumor. For example, by day 108 following dosing, half the mice treated with the conventional allogeneic CD19 CAR-T cell therapy had expired from their recurrent tumor burden, and the surviving mice in that cohort had metastatic disease. In contrast, by day 108 following dosing, all of the CB-010-treated mice were alive and roughly half had no detectable tumor burden. As shown in the survival curve in figure 21 below, all of the mice treated with the conventional allogeneic CD19 CAR-T cells had succumbed to their tumors by approximately day 135, while all but one of the CB-010 treated mice were still alive by day 160.

Overall, our data demonstrate that the removal of the PD-1 checkpoint from the CB-010 CAR-T cells provided a statistically significant survival advantage in mice bearing robust and metastatic B cell tumors. Our data suggest that the PD-1 knockout may have led to a more robust debulking of the tumor by CB-010 during the early part of the study compared to the conventional allogeneic CD19 CAR-T cells, leading to a reduction in the recurrence of the tumor cells. Based on these data, we believe CB-010 has the potential for a better therapeutic index compared to other allogeneic CAR-T cells. If a lower dose of CB-010 has meaningful activity in the clinical setting, it would lead to several potential advantages including limited toxicity, increased numbers of doses per manufacturing run, and a reduced cost of goods.

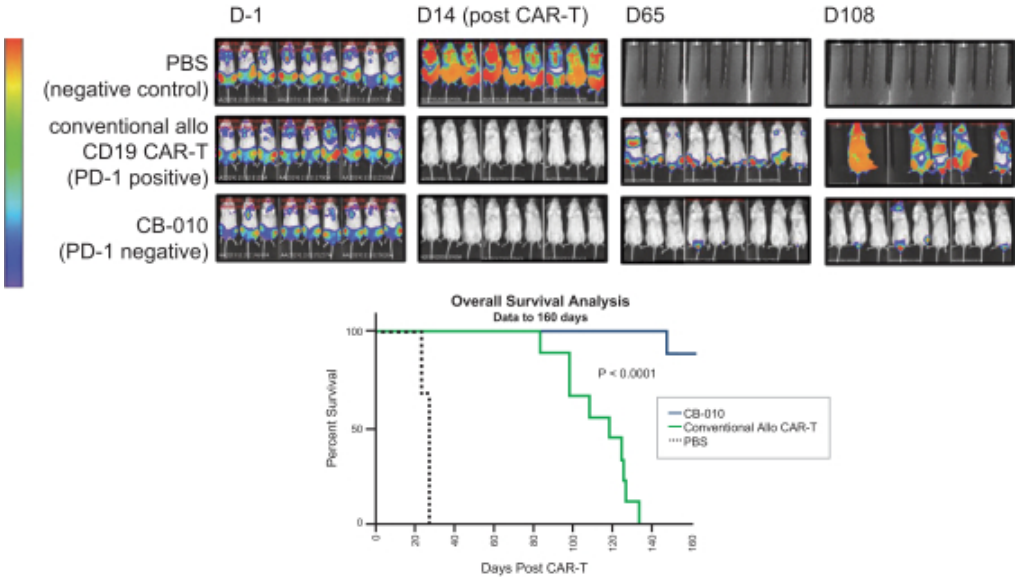

Figure 21. *Our preclinical mouse xenograft model demonstrates that CB-010 leads to a significant survival advantage over a conventional allogeneic CAR-T lacking a PD-1 knockout.*

In addition, as shown in figure 22 below, a single-dose CB-010 treatment led to robust, reproducible, and statistically significant survival in mice bearing DLBCL tumor cells, MCL tumor cells, or a patient-derived xenograft, or PDX, model of DLBCL.

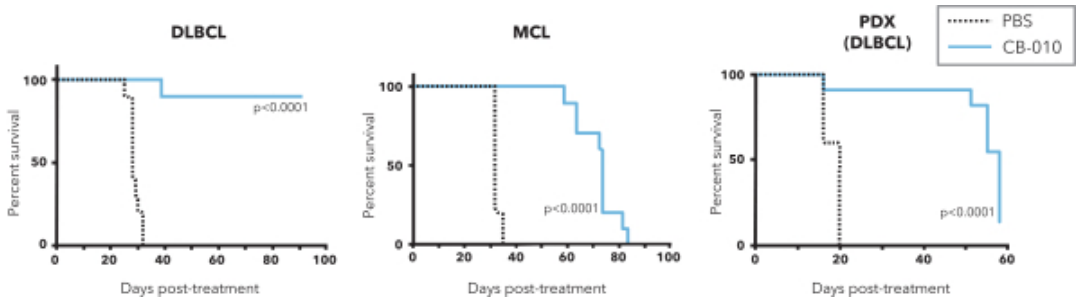

Figure 22. *CB-010 demonstrates statistically significant preclinical survival benefit across B-NHL indications.*

Together, our data support the efficacy of CB-010 in the treatment of CD19-positive B cell malignancies in mice.

In addition, we determined in our *in vitro* studies that the knockout of PD-1 does not impair CAR-T cell activity. We characterized the antitumor activity of CB-010 CAR-T cells *in vitro* by co-incubating CB-010 cells with tumor cells of B cell origin. For example, CB-010 cytotoxic activity was tested *in vitro* against a CD19-positive model cell line of DLBCL (Toledo cells). As shown in figure 23 below, CB-010 cells demonstrate dose-dependent and robust cytotoxic activity at a range of effector-to-target ratios compared to negative control cells in which the *TRAC* gene was knocked out but no CAR was inserted, called *TRAC* KO, or compared to cells

without any genome editing, called wild-type, or WT. We additionally compared the cytotoxic activity of CAR-T cells where we inserted the CAR into the *TRAC* locus, but did not knock out PD-1, called conventional allogeneic CD19 CAR-T cells. CB-010 and conventional allogeneic CD19 CAR-T cells exhibit equivalent cytotoxic activity demonstrating that the PD-1 knockout does not impair cytotoxic activity.

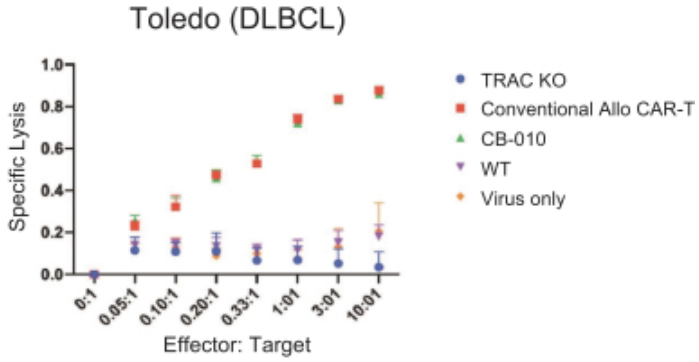

Figure 23. *Our in vitro studies demonstrate that the PD-1 knockout does not impair CAR-T cell activity.*

We evaluated the preclinical safety of CB-010 in mice and determined that CB-010 does not lead to GvHD in our mouse models. For comparison, we evaluated mice that received normal human T cells that were not genome edited and therefore express the T cell receptor, or TCR. In our study, we observed that the normal, unedited human T cells caused GvHD in the mice, as we expected, because the T cells could recognize the mouse tissues as foreign. GvHD was measured as changes in body weight and other clinical signs. Importantly, we observed that CB-010 did not induce any signs of GvHD. These observations were part of the data package that we provided to the FDA for our IND.

CB-011

Overview: Strategy and Rationale

CB-011 is an allogeneic CAR-T cell therapy targeting BCMA-positive malignancies. The CB-011 cells express our proprietary, potent, humanized anti-BCMA CAR that exhibits better performance in preclinical *in vivo* antitumor activity compared to other BCMA CARs we evaluated. We acquired a novel humanized scFv directed to BCMA that we use for the generation of the BCMA-specific CAR in CB-011.

We believe that the edits we make to immune cloak the product will maintain the CB-011 cells in the patient's circulation longer. CB-011 is a preclinical product candidate and we make a total of four genome edits using the Cas12a chRDNA technology to manufacture CB-011.

- *TRAC knockout*: We knock out the *TRAC* gene in order to eliminate expression of the T cell receptor, or TCR, from the surface of the CAR-T cells. The removal of TCR expression is intended to prevent graft versus host disease, or GvHD, in patients.

- *Site-specific insertion of the anti-BCMA CAR*: We insert the BCMA-targeted CAR into the *TRAC* gene by AAV6 transduction and homology directed repair. We believe site-specific insertion of the CAR has advantages compared to random integration mediated by lentiviral or retroviral insertion. For example, random integration leads to the risk of unintended gene disruption which is avoided via site-specific insertion. The insertion of the CAR yields a cell product that exhibits BCMA-specific cytotoxicity.

- *B2M knockout:* We knock out B2M, a protein necessary for the presentation of HLA class I molecules on the surface of a T cell. The disruption of the *B2M* locus yields a cell product that does not express endogenous HLA class I molecules, limiting the ability of the patient's T cells to detect and reject the CAR-T cell therapy.

- *Site-specific insertion of a B2M–HLA-E fusion protein:* We site-specifically insert a transgene that fuses B2M, HLA-E, and a peptide by AAV6 transduction and homology directed repair. HLA-E is a minor class I antigen that interacts with NK cells. This insertion, combined with the *B2M* knockout, yields a cell product that has only HLA-E, and no other class I antigens, on its surface. The presence of only HLA-E will prevent both the patient's T cells and NK cells from rapidly rejecting the therapy.

In figure 24 below, we outline the impact of the different edits in the CB-011 product candidate to demonstrate how different leukocyte immune cells of the patient will interact with the CAR-T cells.

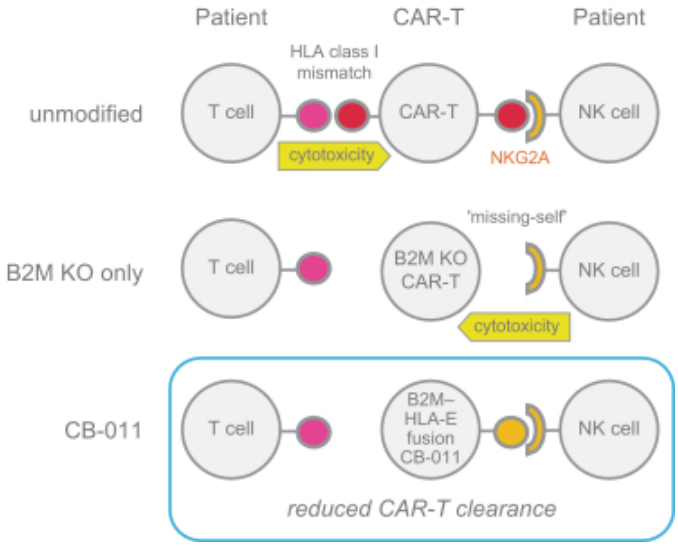

Figure 24. *Our CB-011 cloaking strategy blunts immune-mediated rejection by patient T and NK cells.*

In this example, we show that unmodified CAR-T cells, those that have intact HLA class I antigens, are subject to rejection by the patient's cytotoxic T cells once the T cells recognize the allogeneic CAR-T cells as foreign. This is mediated by the presentation of peptides by the CAR-T cells via their HLA class I antigens to the patient's immune system that will recognize them as foreign since the CAR-T cells are derived from a non-familial healthy donor. If we only knock out the *B2M* gene, thereby eliminating all HLA class I antigens, the cytotoxic T cells of the patient would no longer recognize the CAR-T cells as foreign. However, the NK, cells of the patient would detect the lack of HLA class I antigens, a concept known as "missing self," which would unleash the activity of the NK cells, enabling them to destroy the allogeneic CAR-T cells. In CB-011, we protect the CB-011 CAR-T cells from rejection by both the patient's cytotoxic T cells and NK cells by removing endogenous HLA class I antigen presentation through the knockout of *B2M* and by inserting a B2M–HLA-E fusion into the *B2M* locus.

We believe that this strategy will enable the CB-011 CAR-T cells to remain in circulation longer in patients, providing for increased potential of antitumor activity.

Target Indication

The BCMA CAR targets the CAR-T cell therapy to B cells expressing BCMA on their surface. CB-011 is a product candidate for the treatment of relapsed or refractory MM. In 2020, 18% of hematologic malignancies in the United States and 1.8% of all cancers were MM. The median age of diagnosis is 69 years, and there are an estimated 32,270 new cases in the United States with an estimated 12,830 deaths each year. Five-year survival in these patients is approximately 47%.

Preclinical Data

To demonstrate that the B2M–HLA-E fusion protects CB-011 from NK-mediated cell killing, we set up an *in vitro* study where NK cells were incubated with CAR-T cells containing the attributes of the three examples described in figure 24 above. The results of this analysis are shown in figure 25 below. The unmodified CAR-T cells were subject to killing, or lysis, by the NK cells. The knockout of *B2M* led to enhanced killing by the NK cells, demonstrating the "missing self" hypothesis. Insertion of the B2M–HLA-E fusion in the CB-011 cells protected them from NK cells more than the unmodified cells, indicating they could resist killing by NK cells, thereby suggesting longer circulation potential in patients.

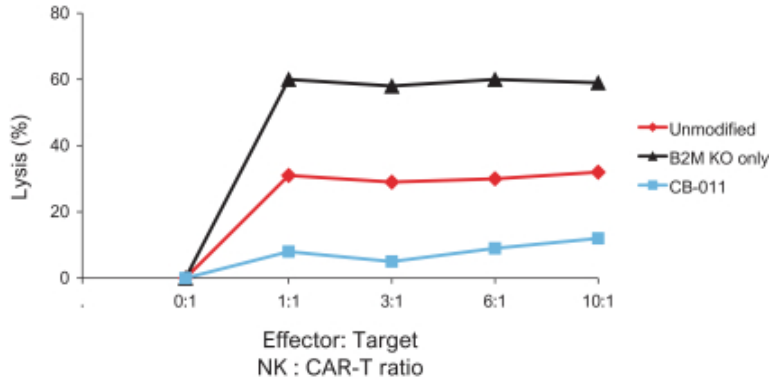

Figure 25. *Our in vitro data demonstrate that the B2M–HLA-E fusion protects CB-011 CAR-T cells from NK cell-mediated lysis. We measured in vitro cytotoxicity 24 hours after CAR-T cell co-incubation with NK-92 cells.*

We acquired a novel humanized scFv directed to BCMA that we use for the generation of the CB-011 CAR based on preclinical *in vivo* antitumor activity that exhibited better performance compared to other BCMA-specific scFvs we evaluated. For example, we constructed CARs using this and other scFvs, and we evaluated the antitumor potential of CAR-T cells expressing these different CARs in mice bearing BCMA-positive tumors. In figure 26 below, we show an example of mouse xenograft data comparing CB-011 cells with CAR-T cells expressing an alternative BCMA CAR previously described in the literature and evaluated in multiple clinical trials. CB-011 cells led to statistically significant and longer survival of the tumor-bearing mice. The studies were conducted in two different BCMA-positive tumor models, including MM (left panel).

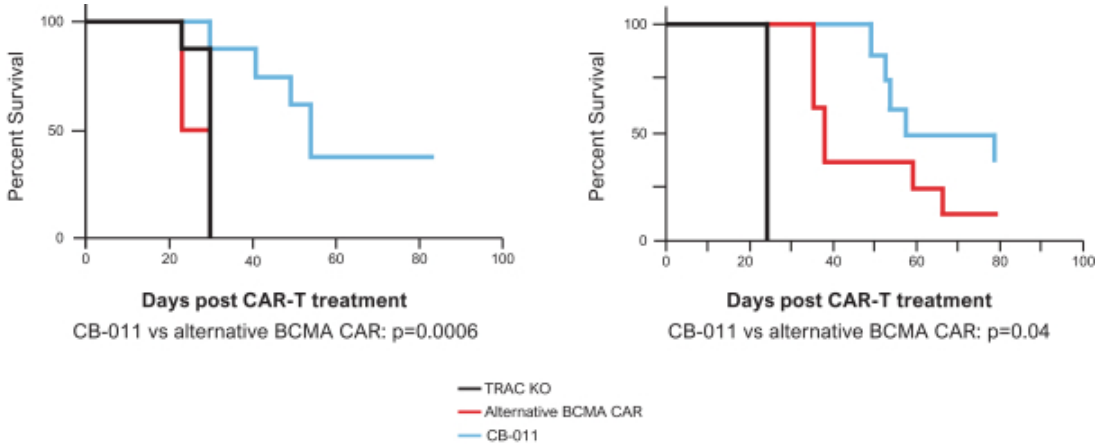

Figure 26. *CB-011 led to statistically significant and longer survival of tumor-bearing mice relative to alternative anti-BCMA CAR-T cells. Left panel represents established subcutaneous multiple myeloma tumor xenografts after a single dose CAR-T cell treatment. Right panel represents established orthotopic BCMA+ tumor xenografts after a single dose CAR-T cell treatment. TRAC KO cells, a negative control, are T cells with only a knockout of the TRAC gene and no CAR.*

Clinical Development Plan

We expect to file an IND in 2022 for a phase 1 clinical trial evaluating CB-011 in patients with relapsed or refractory MM. We anticipate evaluating CB-011 in patients with a documented diagnosis of active MM according to International Myeloma Working Group diagnostic criteria who have experienced at least two prior lines of therapy with previous exposure to a first-line triplet therapy including a proteasome inhibitor, an immunomodulatory agent, and an anti-CD38 antibody (unless intolerant to these therapies) and are refractory to the last line of therapy.

CB-012

Overview: Strategy and Rationale

CB-012 is our allogeneic CAR-T cell product candidate that targets the antigen CD371, also known as CLL-1 or CLEC12A, a receptor expressed on AML tumor cells. Our goal is to make multiple edits to this product candidate using our Cas12a chRDNA technology. We believe CD371 is a compelling target for the treatment of AML. An important aspect of the CD371 antigen is its expression on >90% of AML tumors and leukemic stem cells, and its lack of expression on hematopoietic stem cells, or HSCs. The absence of expression on HSCs indicates that these bone marrow cells will not be targeted by the CD371-directed CB-012 CAR-T cells, thereby preventing a patient from loss of a critical compartment of their immune system vital for fighting infections and cancer. As such, patients receiving CB-012 treatment would not require an HSC transplant to provide them with myeloid compartment cells for sustained immunity.

We have in-licensed from MSKCC a panel of fully human scFvs targeting CD371 from which we will select the appropriate scFv(s) for the generation of our CAR. As described above for CB-010 and CB-011, an important aspect of CB-012 will be appropriately armoring the CAR-T cells using our Cas12a chRDNA technology to improve the persistence of antitumor activity. We are evaluating several options including the PD-1 knockout and immune-cloaking approaches. We are considering additional armoring technologies which may include editing that will help the CAR-T cells survive longer, withstand functional suppression by the tumor cells, and enhance their antitumor activity.

Target Indication

AML is a cancer of the bone marrow currently treated with chemotherapy, radiation, targeted therapies, and/or HSC transplant. In 2020, there were 20,000 new cases of AML in the US, with >40,000 new patients in the seven major global markets. Five-year survival in these patients is <30%, so significant unmet need remains for this indication.

Intensive induction chemotherapy, known as 7 + 3, consisting of cytarabine and an anthracycline is the most effective therapy for adults newly diagnosed with AML, although the treatment has significant associated toxicities. Thus, there remains significant unmet need in the treatment of AML.

Preclinical Data

Researchers at MSKCC evaluated one of the CD371-specific scFvs that we in-licensed in a CAR that they expressed on T cells. The CD371-specific CAR-T cells were tested in an established mouse xenograft model of AML. For comparison, they evaluated two negative control CAR-T cells, one that could not bind to the AML tumor cells, and one specific for CD19, a protein not expressed on AML cells. As shown in figure 27 below, the CD371-specific CAR-T cells significantly extended survival in the AML tumor-bearing mice compared to mice that received either of the two negative control CAR-T cell treatments.

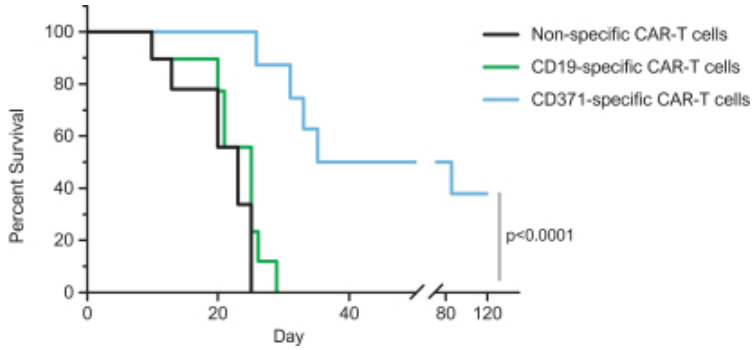

Figure 27. *Researchers at MSKCC conducted a study evaluating CD371-specific CAR-T cells. Their work demonstrated that CD371-specific CAR-T cells confer long-term survival in a xenograft model of AML (data used with permission from MSKCC).*

Clinical Development Plan

Our strategy is to file an IND for CB-012 in 2023 with the intent to evaluate this therapy in patients with relapsed or refractory AML in a phase 1 clinical trial.

CB-020

Overview: Strategy and Rationale

Our CB-020 program is a CAR-NK cell product candidate derived from iPSCs designed to target an antigen expressed on solid tumors and associated metastases. Despite their clinical success against hematologic malignancies, CAR-T cells have not yet demonstrated broad, robust antitumor activity in the solid tumor setting. NK cells are a compelling platform for cell therapy development for targeting multiple different solid tumors. NK cells inherently have antitumor activity against primary solid tumors and metastases and they are naturally transferable between donor and patient. We believe they are a promising cell type for new therapeutic

development. In order to perform multiple, sophisticated genome edits to empower NK cells with the attributes we believe will be necessary to successfully target the intended solid tumor and overcome the immunosuppressive tumor microenvironment, we have developed a proprietary protocol to edit iPSCs and differentiate them into iNKs. See figure 28 below.

There are multiple advantages of using iPSCs. They are amenable to higher numbers of genome-editing events than most primary cells. A solitary clone isolated after genome editing will have all of the intended edits. This is distinct from the allogeneic CAR-T cell products derived from healthy donor leukapheresis where a proportion of the T cells in a batch contain all of the intended edits. This fully edited iPSC will then be differentiated into iNK cells and expanded for therapeutic use. This platform will enable us to generate sophisticated, armored iNK cell product candidates with attributes necessary for targeting solid tumors.

An outline of the multi-step iPSC to iNK platform we developed to generate CB-020, and future product candidates, is shown in figure 28 below.

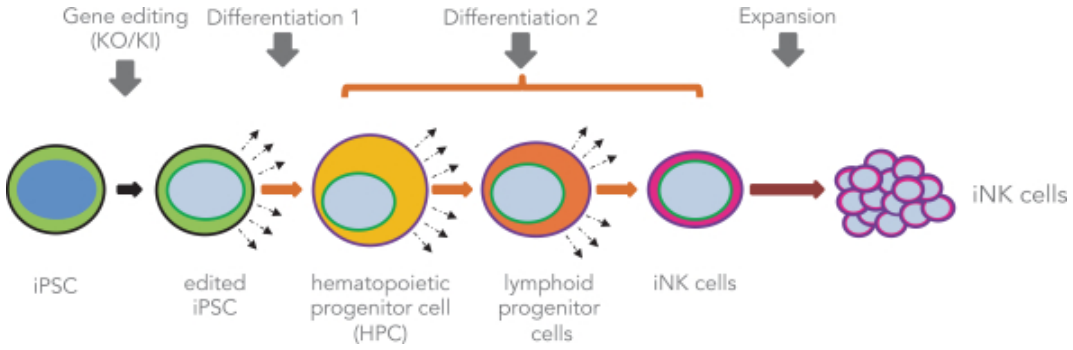

Figure 28. *Our platform for editing iPSCs and differentiating them into iNKs.*

Target Indication

Multiple clinical trials are evaluating autologous CAR-T and CAR-NK cell therapies targeting solid tumors. Although some activity has been observed clinically, the overall response rates with these therapeutic modalities have been significantly lower and fewer complete responses have been observed compared to those observed when treating hematologic malignancies. Some of the challenges facing these therapies may be that the CAR-T and CAR-NK cells have difficulty in trafficking to the tumor, surviving and proliferating at the tumor site, penetrating the tumor, surviving the immunosuppressive tumor microenvironment, and debulking a heterogeneous tumor that may not uniformly express the target of the CAR-T or CAR-NK cell.

For CB-020, we will implement multiple genome edits that we believe will address the challenges described above including solid tumor heterogeneity, immunosuppression, trafficking, and tumor penetration, as well as other strategies to maintain persistence such as those described for our CAR-T product candidates. A clonal iPSC line will be isolated, evaluated for genomic integrity, differentiated into iNK cells, expanded in culture using our established process, and evaluated in preclinical models of safety and efficacy prior to IND filing. We are evaluating multiple targets and strategies for the development of this product series.

Preclinical Data

In figure 29 below, we demonstrate that iNK cells differentiated from iPSCs express a key defining antigen called CD56, or NCAM, that is indicative of the NK cell lineage. Additionally, we show that the iNK cells exhibit the expected polyfunctionality of NK cells. For example, we show that the iNK cells exhibit dose-dependent cytotoxic activity and interferon gamma, or IFNg, secretion when co-incubated with tumor cells *in*

vitro. Further, when the iNK cells are co-incubated *in vitro* with CD20 positive tumor cells and rituximab, an anti-CD20 antibody, we observe antibody-dependent cell cytotoxicity, or ADCC.

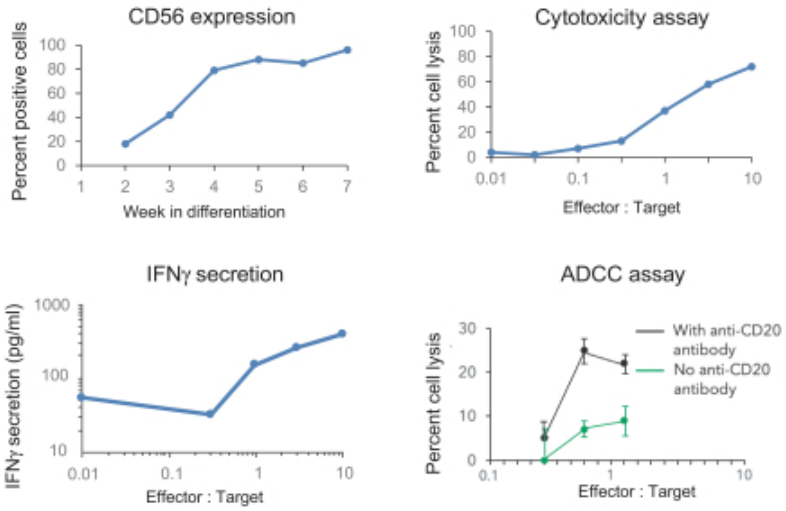

Figure 29. *iNK cells differentiated from iPSCs using our differentiation protocol demonstrate the expected polyfunctionality of NK cells.*

Our iNK platform provides the potential for multiple future cell therapeutics beyond CB-020, targeting different solid tumor antigens and types. The biology of the tumor will help define the nature of the genome edits we implement to customize each product to address the challenges of one or more particular malignancies.

Clinical Development Plan

Our strategy is to file an IND for CB-020 with the intent to advance it clinically to treat multiple solid tumor types.

Our Manufacturing Strategy

Manufacturing of both autologous and allogeneic cell therapies requires multiple components and is complex, and there are many similarities in the processes for both kinds of therapies. The advantage of allogeneic therapies is the use of cells from healthy donors and therefore the ability to prepare, qualify, and release clinical material in advance of patient need.

For CB-010, we have optimized the manufacturing process that we developed in-house and have transferred the manufacturing to an external CMO that manufactures cGMP grade material for our ANTLER phase 1 clinical trial. Additionally, we have developed different analytical methods to understand the integrity of our cells based upon our manufacturing process. We have made a significant investment in process development to facilitate our efforts to improve both the supply chain and our product characterization capabilities.

Figure 30 below describes the process we have developed for the manufacturing of CB-010 CAR-T cells. We use electroporation for the genome-editing step in our process. We use a licensed MaxCyte instrument to achieve high levels of genome editing at manufacturing scale. Our process includes an important step prior to cryopreservation that significantly removes residual TCR-expressing cells to reduce the likelihood that CB-010 cells will induce GvHD in patients.

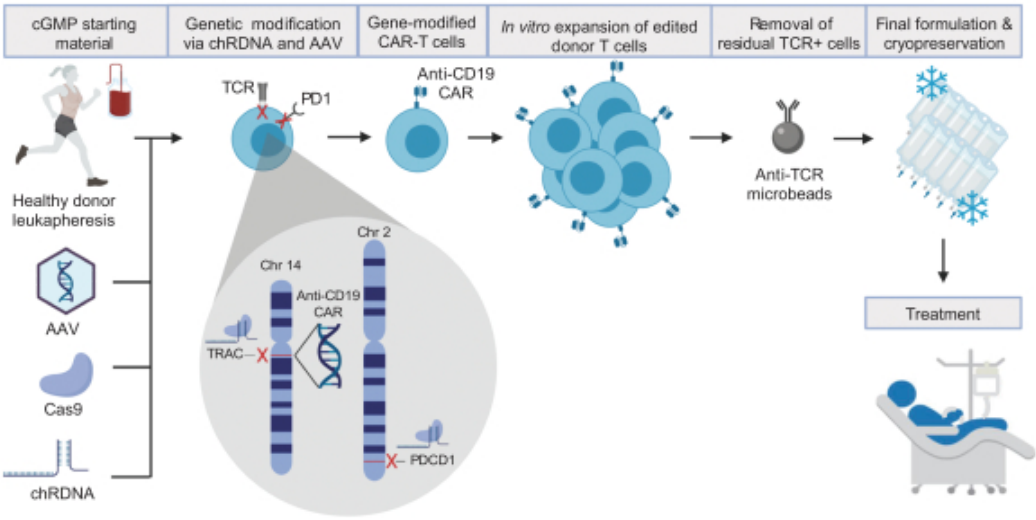

Figure 30. *Our internal process development team developed the manufacturing process for CB-010 and transferred it to a CMO.*

Our process development and manufacturing core competencies and advantages include:

- Standard operating procedures and technologies;
- Process development research from smaller to larger scales;
- Procedures that enable the transfer from process development stage to cGMP conditions;
- Custom engineering to create a robust procedure for each unique pipeline product candidate;
- Removal of residual TCR positive T cells after genome editing to minimize the risk of GvHD in patients;
- Evaluation of all manufacturing steps to optimize for maximal productivity and product integrity;
- Fully closed system;
- Focus on efforts to enhance cell viability;
- Enhancement of gene knockout, CAR expression, and gene insertion;
- Improvements in retaining early memory T cell phenotypes; and
- Approaches to maximizing the number of doses per batch.

The CMO that is manufacturing the phase 1 clinical supply of our CB-010 product candidate is located in the United States and is subject to cGMP requirements, using both qualified equipment and materials. We use multiple CMOs to individually manufacture cGMP plasmids, chRDNA guides, Cas proteins, and AAV6 vectors used in the manufacture of our CAR-T and CAR-NK cells. We expect to rely on our CMOs for the manufacturing of our product candidates in the future to expedite readiness for future clinical trials and most of these CMOs have demonstrated capability in preparation of materials for commercialization. Additionally, we may decide to build our own manufacturing facility in the future to provide us greater flexibility and control over our clinical or commercial manufacturing needs.

Strategic Agreements

We recognize the broad opportunity presented by our genome-editing technologies to benefit patients, and we appreciate that one company is unlikely to have sufficient resources to fully exploit this potential across multiple indications and applications. As part of our strategy to maximize the value and benefit of our technologies, we have entered into a strategic collaboration with AbbVie and intend to explore mutually beneficial strategic collaborations with other biotechnology or pharmaceutical companies in the future.

AbbVie Manufacturing Management Unlimited Company (AbbVie)

On February 9, 2021, we entered into a Collaboration and License Agreement with AbbVie, or the AbbVie Agreement. The collaboration is based on the selection and use of targets under programs, each referred to as a Program Slot (which may include one target or, for a dual CAR-T product, two targets), to develop collaboration CAR-T products (and corresponding licensed products). For each of AbbVie's two Program Slots (or up to four Program Slots, if AbbVie elects to expand the number as discussed below), we will collaborate to identify and develop one or more collaboration allogeneic CAR-T products directed toward the single cancer target or target combination chosen by AbbVie and as described in an applicable research plan, utilizing our Cas12a chRDNA genome-editing and cell therapy technologies. We granted AbbVie an exclusive (even as to us), royalty-bearing, worldwide license, with the right to grant sublicenses, under our Cas12a chRDNA and cell therapy intellectual property (as well as certain genome-editing technology that we may acquire in the future) and intellectual property that may be developed under the collaboration, solely for AbbVie to develop, commercialize, manufacture, and otherwise exploit the collaboration CAR-T products in the field of human diagnostics, prophylactics and therapeutics. Under the terms of the AbbVie Agreement, we will conduct certain preclinical research, development, and manufacturing activities under the collaboration, including certain activities for the manufacture of supply of licensed product for AbbVie's phase 1 clinical studies, and AbbVie will reimburse us for all such activities. The duration of the collaboration is not fixed. We have formed a joint governance committee, or JGC, to manage the collaboration.

We received an upfront cash payment of $30.0 million from AbbVie. During the collaboration, AbbVie may expand from two Program Slots to a total of four Program Slots by paying us an additional $15.0 million for each such Program Slot, provided that AbbVie must make such payment within the earlier of (a) 60 calendar days following completion of the phase 1 clinical studies for the initial collaboration CAR-T and (b) December 31, 2025. Under the terms of the AbbVie Agreement, we are eligible to receive up to $150.0 million in future developmental, regulatory, and launch milestones for each Program Slot and up to $200.0 million in commercial milestones for each Program Slot. We are also eligible to receive global royalties on incremental net sales of licensed products sold by AbbVie, its affiliates, and sublicensees in the high-single-digit to low-teens percent range, subject, in certain instances, to various reductions.

Under the terms of the AbbVie Agreement, AbbVie has selected its initial targets and has reserved six additional targets, which may be used or substituted into the two Program Slots or used for the third or fourth Program Slots if AbbVie expands the number of Program Slots during the collaboration. We have, with AbbVie, identified and agreed to an initial list of four unavailable targets.

Additionally, with the exception of AbbVie's reserved targets and our unavailable targets (assuming we are meeting the criteria set forth above), in the event that AbbVie wishes to propose a target, there is a gatekeeper mechanism whereby such target will not be available to AbbVie.

The term of the AbbVie Agreement will continue in force and effect until the date of expiration of the last royalty term of the last country in which a licensed product is exploited. On a licensed product-by-licensed product and country-by-country basis, the royalty term is the period of time beginning on the first commercial sale of a licensed product in a country and ending on the latest of (a) the expiration, invalidation, revocation, cancellation, or abandonment date of the last Caribou patent that includes a valid claim that claims (i) the collaboration CAR-T product in such licensed product, or (ii) the method of making the collaboration CAR-T product in such licensed product (in the case of (ii), only for so long as no biosimilar product is commercially available in such country), in such country; (b) 10 years from the first commercial sale of such licensed product in such country; and (c) expiration of regulatory exclusivity for such licensed product in such country. The AbbVie Agreement may be terminated during the term by either party for an uncured material breach or bankruptcy. Additionally, AbbVie may terminate the AbbVie Agreement, in its entirety or on a licensed product-by-licensed product basis, effective immediately upon written notice to us, if AbbVie in good faith believes that it is not advisable for AbbVie to continue to exploit the collaboration on CAR-T products or licensed products as a result of a perceived serious safety issue. AbbVie may also terminate the AbbVie Agreement in its entirety, or, for any or no reason, upon 90 calendar days' prior written notice to us.

AbbVie does not have any rights to CB-010, CB-011, CB-012, or CB-020.

Memorial Sloan Kettering Cancer Center (MSKCC)

On November 13, 2020, we entered into an Exclusive License Agreement with MSKCC, or the MSKCC Agreement, under which we exclusively licensed from MSKCC know-how, biological materials, and related patent families to humanized scFvs targeting CD371 for use in T cells, NK cells, and iPSC-derived cells for allogeneic CD371-targeted cell therapy, which is our CB-012 program. We paid an upfront payment of cash and shares of our common stock and will owe annual license maintenance fees until we have commercial sales. For each licensed product, there are potential clinical, regulatory, and commercial milestones totaling up to $112.0 million and, in the event we, or our affiliates or sublicensees, receive regulatory approval for CB-012, we will owe low- to mid-single-digit percent royalties on net sales by us, our affiliates, and our sublicensees. Our license includes the right to sublicense through multiple tiers and we will owe MSKCC a percentage of upfront cash or equity received from our sublicensees. The percentage owed decreases as our products move through development, starting at a low-double-digit percentage if clinical trials have not yet begun and decreasing to a mid-single-digit percentage if the product is in later clinical trial stages. We are also responsible for a percentage of licensed patent costs. The MSKCC Agreement includes certain diligence milestones that we must meet; provided, however, that these may be extended upon payment of additional fees.

MSKCC is entitled to certain success payments in the event that our stock value increases by certain multiples. The potential payments are based on multiples of the fair market value of our common stock compared with a split-adjusted initial share price of $5.1914 per share, subject to future adjustments for stock splits, during a specified time period described below. Our common stock price will be determined by reference to the 45-day volume weight average trading price of our common stock. At our option, payments may be made in cash or common stock. The relevant time period commences when the first patient is dosed with our CB-012 product in the first phase 1 clinical trial and ends upon the earlier of the third anniversary of approval of our biologics license application, or BLA, by the FDA or 10 years from the date the first patient was dosed with CB-012 in the first phase 1 clinical trial. Under the terms of the MSKCC Agreement, the aggregate success payments will not exceed $35.0 million. Additionally, if we undergo a change of control during the relevant time period, a change of control payment may be owed, depending upon the increase in our stock price due to the change of control and also to what extent success payments have already been paid. In no event will the combination of success payments and any change of control payment exceed $35.0 million. The relevant time period during which

MSKCC is eligible for success payments and a change of control payment has not yet commenced; thus, this offering will not trigger any such payments.

We may terminate the MSKCC Agreement upon 90 calendar days' prior written notice to MSKCC. MSKCC may terminate the agreement in the event of our uncured material breach, bankruptcy, or criminal activity. In the event that MSKCC materially breaches the MSKCC Agreement in certain circumstances (for example, granting a third party a license in our field), then during the time of such uncured material breach, MSKCC will not be entitled to receive any success payments or any change of control payment.

ProMab Biotechnologies, Inc. (ProMab)

On January 31, 2020, we entered into a Sale and Assignment Agreement with ProMab, or the ProMab Agreement, as amended, under which we purchased a humanized scFv targeting the BCMA, and a patent family related thereto for an upfront cash payment of $0.4 million and the potential for future royalties. To date, two U.S. patents have granted (U.S. Patent Nos. 10,927,182; 11,021,542), both of which will expire in January 2040 (assuming no patent term extension). Our anti-BCMA CB-011 product candidate, which is currently in preclinical studies, contains this BCMA scFv. Under the terms of the ProMab Agreement, in the event we, or our affiliates or licensees, receive regulatory approval for CB-011, we will owe ProMab low-single-digit percent royalties on net sales by us, our affiliates, and licensees until the expiration, abandonment, or invalidation of the last patent within the assigned patent family (*i.e.*, 2040, without patent term adjustment or patent term extension). Such royalties may be reduced by no more than 50% in the event that we must pay royalties to a third party for other intellectual property covering our product. Either party may terminate the ProMab Agreement in the event of an uncured material breach or bankruptcy of the other party. In the event that ProMab terminates the ProMab Agreement due to our uncured material breach or bankruptcy, we must cease the manufacture, use, and sale of any products or product candidates incorporating the purchased anti-BCMA scFv.

Pioneer Hi-Bred International, Inc. (Pioneer, now Corteva Agriscience)

On July 13, 2015, we entered into an Amended and Restated Collaboration and License Agreement with Pioneer (then a DuPont company), or the Pioneer Agreement, as amended, which superseded and replaced a prior Collaboration and License Agreement entered into on September 10, 2014. Under the terms of the Pioneer Agreement, we and Pioneer cross-licensed background CRISPR intellectual property portfolios. Pioneer granted us an exclusive worldwide license, with the right to sublicense, to its background CRISPR intellectual property in the field of research tools, and a non-exclusive license, with the right to sublicense, for CRISPR in therapeutics and all fields outside of the Pioneer field, including in the field of human and animal therapeutics. We granted Pioneer an exclusive license, with the right to sublicense, to our background CRISPR intellectual property, including the CVC IP discussed below, in certain agricultural crops, specified microorganisms, a defined industrial bio field, and certain nutrition and health applications, or the Pioneer Exclusive Field, and a non-exclusive license, with the right to sublicense, to Pioneer for CRISPR in fields outside of research reagents. The Pioneer Agreement continues until the expiration, abandonment, or invalidation of the last patent or patent application within the licensed intellectual property; provided, however, that the parties may terminate the Pioneer Agreement by mutual consent or either party may unilaterally terminate the Pioneer Agreement in the event of an uncured breach of a payment obligation, bankruptcy, or failure to maintain or own licensed intellectual property by the other party in the event the non-breaching party is materially adversely affected by such failure. Under the terms of the Pioneer Agreement, we are obligated to pay low-single-digit percent royalties to Pioneer for our research tool products as well as certain sublicensing revenue in that field. We are eligible to receive milestone payments from Pioneer in the event certain regulatory and commercial milestones are met, for a total of up to $22.4 million, related to specified row crops and we are also eligible to receive low-single-digit percent royalties for defined agricultural products and certain sublicensing revenue in that field.

The chRDNA patent family was developed under a three-year research collaboration between us and Pioneer, which ended December 31, 2016. Initially, this patent family was owned by Pioneer under the terms of the Pioneer Agreement, and we and Pioneer split the costs of patent prosecution and maintenance equally. Pioneer granted us an

exclusive license to the chRDNA patent family in the fields of human and animal therapeutics and research tools as well as a non-exclusive license in certain other fields outside of the Pioneer Exclusive Field. Through an amendment to the Pioneer Agreement, dated December 18, 2020, Pioneer assigned the chRDNA patent family to us. Pioneer retained all of its existing rights (including its sublicensing rights) to the chRDNA patent family despite the change in ownership. As consideration for the assignment, we made an upfront payment of $0.5 million and are obligated to pay all patent prosecution and maintenance costs going forward; up to $2.8 million in regulatory milestones for therapeutic products developed by us, our affiliates, and licensees; up to $20.0 million in sales milestones over a total of four therapeutics products sold by us, our affiliates, and licensees; and a percentage of sublicensing revenues received by us for licensing the chRDNA patent family. The sublicensing agreements that we entered into prior to December 18, 2020 (for example, the Intellia Agreement discussed below) are not subject to these economics; however, this amendment is applicable to the AbbVie Agreement.

Intellia Therapeutics, Inc. (Intellia)

On July 16, 2014, we entered into a License Agreement with Intellia, LLC (now Intellia Therapeutics, Inc.), or the Intellia Agreement, as amended, under which we granted Intellia an exclusive worldwide license, with the right to sublicense, to certain CRISPR-Cas9 technology for a defined field of human therapeutics in exchange for Intellia stock. The Intellia Agreement included a license to certain of our future CRISPR-Cas9 intellectual property until such time as our direct or indirect ownership percentage in Intellia dropped below 10%, called the IP cut-off date, which occurred on January 30, 2018. Intellia granted us an exclusive worldwide license, with the right to sublicense, to its CRISPR-Cas9 technology for all fields outside of the defined field of human therapeutics, including a license to certain of Intellia's future CRISPR-Cas9 intellectual property until the IP cut-off date. Each party had the right to opt-in to any licenses in its field of use entered into by the other party prior to the IP cut-off date, subject to the terms and conditions of such license, and Intellia opted in to our Pioneer Agreement and thus has a license to the Pioneer background CRISPR-Cas9 intellectual property. As discussed in the "Legal Proceedings" section, in an interim decision, an arbitration panel ruled that our chRDNA patent family, as it pertains to Cas9 chRDNAs, is part of our exclusive license to Intellia; however, the arbitration panel granted us an exclusive leaseback for our CB-010 product candidate. Under the Intellia Agreement, each party is responsible for 30% of the other party's expenses for prosecution and maintenance of the licensed intellectual property, including 30% reimbursement of the patent prosecution and maintenance costs that we pay to UC/Vienna as described below. The milestones and royalties set forth in the Intellia Agreement are those in the UC/Vienna Agreement and so we pass through any payments received from Intellia to UC/Vienna. The Intellia Agreement continues for the life of the licensed patents and patent applications; provided, however that either party may terminate upon the occurrence of certain events.

In 2018, Intellia initiated an arbitration proceeding over whether two patent families relating, respectively, to CRISPR-Cas9 chRDNA guides and Cas9 scaffolds, were included in the Intellia Agreement. In 2019, we received an interim award from the arbitration panel determining that both patent families are included in the Intellia Agreement, but the panel granted us an exclusive leaseback to Cas9 chRDNA guides under economic terms to be negotiated by the parties. In 2020, the arbitration panel clarified that the leaseback relates solely to our CB-010 product candidate. On June 16, 2021, the parties entered into a leaseback agreement, or the Leaseback Agreement, which resolved the dispute and, on July 21, 2021, the arbitration panel dismissed the arbitration with prejudice. Pursuant to the Leaseback Agreement, in exchange for Intellia's grant to us of an exclusive license to certain intellectual property relating to CRISPR-Cas9, including Cas9 chRDNAs, for use solely in the manufacture of our CB-010 product candidate, we will pay Intellia an upfront cash payment of $1.0 million as well as up to $23.0 million in potential future regulatory and sales milestones, and we will owe Intellia low- to mid- single-digit percent royalties on net sales of our CB-010 product candidate by us, our affiliates, and sublicensees until the expiration, abandonment, or invalidation of the last patent within the intellectual property relating to CRISPR-Cas9, including that relating to Cas9 chRDNAs (*i.e.*, 2036, without patent term adjustment or patent term extension).

The Regents of the University of California (UC) and the University of Vienna (Vienna)

On April 16, 2013, we entered into an Exclusive License for Methods and Compositions for RNA-Directed Target DNA Modification and for RNA-Directed Modulation of Transcription with UC and Vienna, or the UC/Vienna Agreement, as amended, under which we received an exclusive worldwide license, with the right to sublicense, in all fields to the foundational CRISPR-Cas9 patent family co-owned by UC, Vienna, and Dr. Emmanuelle Charpentier, or the CVC IP. Dr. Charpentier has not granted us any rights to the CVC IP, either directly or indirectly. The UC/Vienna Agreement continues until the last-to-expire patent or last-to-be-abandoned patent application of the CVC IP; provided, however, that UC/Vienna may terminate the UC/Vienna Agreement upon the occurrence of certain events, including our uncured material breach of a material term of the UC/Vienna Agreement, and we may terminate the UC/Vienna Agreement at our sole discretion upon written notice. Without patent term adjustment or patent term extension, the CVC IP will expire in 2033. The UC/Vienna Agreement includes certain diligence milestones that we must meet. For products and services sold by us that are covered by the CVC IP, we will owe low- to mid-single-digit percent royalties on net sales, subject to a minimum annual royalty. Prior to such time that we are selling products, we owe UC/Vienna an annual license maintenance fee. We may owe UC/Vienna up to $3.6 million in certain regulatory and clinical milestone payments in the field of human therapeutics and diagnostics for products developed by us, our affiliates, and sublicensees. Additionally, we pay UC/Vienna a specified percentage of sublicensing revenue we receive including cash and equity under our sublicensing agreements, subject to certain exceptions. If we include intellectual property owned or controlled by us in such sublicense, we pay UC/Vienna a low-double-digit percentage of sublicensing revenues received under the sublicense. If we do not include intellectual property owned or controlled by us in such sublicense, we pay UC/Vienna 50% of sublicensing revenues received under the sublicense. To date, we have entered into over 20 sublicensing agreements in a variety of fields such as human therapeutics, forestry, agriculture, research reagents, transgenic animals, certain livestock targets, internal research, bioproduction, cell lines, and microbial applications that include the CVC IP as well as other Cas9 intellectual property owned or controlled by us. We are obligated to reimburse UC for its prosecution and maintenance costs of the CVC IP.

On December 15, 2016, we entered into a Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement, or IMA, with UC, Vienna, Dr. Emmanuelle Charpentier, Intellia Therapeutics, CRISPR Therapeutics AG, ERS Genomics Ltd., and TRACR Hematology Ltd. relating to the CVC IP. Under the IMA, each of the owners of the CVC IP (*i.e.*, UC, Vienna, and Dr. Charpentier) retroactively consented to all licenses and sublicenses granted by the other owners and their licensees and also gave prospective consent to any licenses and sublicenses that may be granted in the future. Additionally, the IMA provides for, among other things, (a) good faith cooperation among the parties regarding patent maintenance, defense, and prosecution of the CVC IP; (b) cost-sharing under which CRISPR Therapeutics AG reimburses us for 50% of what we reimburse UC for patent prosecution and maintenance costs; and (c) notice of and coordination in the event of third-party infringement of the subject patents and with respect to certain adverse claimants of the CRISPR-Cas9 intellectual property. Unless earlier terminated by the parties, the IMA will continue in effect until the later of the last expiration or abandonment date of the CVC IP.

On March 14, 2019, we entered into a Memorandum of Understanding, or MOU, with UC/Vienna, wherein we agreed that, for sublicensees in the fields of human therapeutics and companion diagnostics, we would pay UC/Vienna the royalties and milestones set forth in the UC/Vienna Agreement for products sold by our sublicensees, not the specified percentage of such sublicensing income received by us. We also agreed to various provisions that would be included in all future sublicensing agreements, including specific provisions for exclusive sublicenses.

Intellectual Property

We strive to protect and enhance the proprietary technologies that we believe are important to our business by seeking patents to cover our platform technology. We also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. Our success

will depend significantly on our ability to obtain and maintain patent and trade secret protection for our technology, our ability to defend and enforce our intellectual property rights and our ability to operate without infringing any valid and enforceable intellectual property rights of third parties.

As of the date of this prospectus, we own 48 issued U.S. patents, including 7 U.S. patents covering our chRDNA technology; 218 issued foreign patents; and 85 pending patent applications throughout the world. The patent portfolio owned by us includes U.S. and foreign patents and patent applications covering methods and compositions relating to our Cas9 chRDNA and Cas12a chRDNA guides (which, without patent term adjustment or patent term extension, will expire in 2036). Additionally, our portfolio includes U.S. and foreign patents and patent applications covering methods and compositions relating to the anti-BCMA binding domain of our CB-011 product candidate (which, without patent term adjustment or patent term extension, will expire in 2040). In general, we file our patent applications in the United States and the European Patent Office as well as in numerous other foreign patent jurisdictions. We have exclusively in-licensed intellectual property covering the anti-CD371 binding domains of our CB-012 product from MSKCC (which, without patent term adjustment or patent term extension, will expire in 2040).

Additionally, we have extensive patent protection on CRISPR Type I systems, CRISPR-Cas9 methods and compositions, and other genome-editing technologies. The patent term in the United States and other countries 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, or PTA, 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. Additionally, under the Hatch-Waxman Act, the term of a patent that covers an FDA-approved biologic may also be eligible for a patent term extension, or PTE, of up to five years, which is designed to compensate for the patent term lost during clinical trials and the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent claiming the drug product, methods of use or methods of manufacturing may be restored. Moreover, a patent can only be restored once, and thus, if a single patent is applicable to multiple products, it can only be extended based on one product. Similar provisions are available in Europe and certain other foreign jurisdictions to extend the term of a patent that covers an approved product. Without any patent term extension, the earliest expiration dates of our granted U.S. patents are in 2032 and the latest expiration dates of our granted U.S. patents are in 2040.

As of the date of this prospectus, our trademark portfolio contains 12 trademark registrations, including four U.S. trademark registrations. We have registered “CARIBOU,” “CARIBOU BIOSCIENCES,” and the Caribou logo as trademarks in relevant classes and jurisdictions in the United States, European Union, and United Kingdom.

Furthermore, we rely upon trade secrets, know-how, continuing technological innovation and potential in-licensing opportunities to develop and maintain our competitive position. We seek to protect these trade secrets and other proprietary technology, in part, by entering into confidentiality agreements with parties who have access to them. We also enter into confidentiality and invention assignment agreements with our employees and our agreements with consultants include invention assignment obligations.

Competition

We currently compete across the fields of genome editing and cell therapy. We believe that our novel and proprietary chRDNA genome-editing platform has broad potential applicability across human therapeutic indications, and our strategy is to demonstrate our platform’s capability by first developing improved allogeneic cell therapies in hematologic oncology indications.

The biopharmaceutical industry, and in particular the genome-editing and cell therapy fields, are characterized by intense investment and competition aimed at rapidly advancing new technologies. Our platform and therapeutic product candidates are expected to face substantial competition from multiple technologies, marketed products, and numerous other therapies being developed by other biopharmaceutical companies, academic research institutions, governmental agencies, and private research institutions. Many of our competitors

have substantially greater financial, technical, and other resources, such as larger research and development staff, established manufacturing capabilities and facilities, and experienced marketing organizations with well-established sales forces. In addition, there is substantial patent infringement litigation in the biopharmaceutical industry and, in the future, we may bring or defend such litigation against our competitors.

Compared to first generation genome-editing approaches, our chRDNA platform has shown improved specificity, a reduction in off-target edits and translocations and advanced capability to perform multiplexed edits, in particular multiplexed insertions. While we believe that our scientific expertise, novel technology, and intellectual property position offer competitive advantages, we face competition from multiple other genome-editing technologies and companies. Other companies developing CRISPR-based technologies include, among others, Beam Therapeutics Inc., CRISPR Therapeutics AG, Editas Medicine, Inc., Intellia Therapeutics, Inc., Metagenomi Technologies, LLC, Poseida Therapeutics, Inc., and Scribe Therapeutics, Inc. Companies developing other genome-editing technologies include, among others, Allogene Therapeutics, Inc., bluebird bio, Inc., Cellectis S.A., Precision BioSciences, Inc., and Sangamo Therapeutics, Inc.

We believe that our CAR-T cell therapy product candidates have the potential to offer a superior product to patients due to genome edits we make to improve their persistence with the goal of extending robust CAR-T cell antitumor activity in patients. Additionally, our pioneering scientific expertise in iPSC-derived NK cells sets the foundation for our first CAR-iNK cell therapy to target and antigen present on multiple solid tumor malignancies. Due to the promising therapeutic effect of cell therapies, and the potential benefit of allogeneic treatment alternatives, we expect increasing competition from new and existing companies across four major fronts, which include, among others:

- *Autologous T cell therapy*: Adaptimmune Therapeutics plc, Autolus Therapeutics plc, bluebird, Bristol-Myers Squibb Company, Gracell Biotechnologies Inc., Kite, a Gilead Company, Novartis International AG, Poseida, TCR2 Therapeutics Inc., and Vor Biopharma Inc.;

- *Allogeneic T cell therapy*: Allogene, Atara Biotherapeutics, Inc., Cellectis, Celyad Oncology SA, CRISPR Therapeutics, Fate Therapeutics, Inc., Gracell, Kite, Legend Biotech Corporation, Poseida, Precision Bio, Sana Biotechnology, Inc., and Vor;

- *Allogeneic NK therapy*: Artiva Biotherapeutics, Inc., Celularity Inc., Editas, Fate, Fortress Biotech, Inc., ImmunityBio, Inc., Nkarta, Inc., NKGen Biotech, Inc., and Takeda Pharmaceutical Company Limited;

- *Other cell therapies:* Other companies are developing CAR-expressing immune cell therapies derived from natural killer T cells, or NKT cells, including Kuur Therapeutics; from macrophages, including Carisma Therapeutics; and from gamma-delta T cells, including Adicet Bio, GammaDelta Therapeutics, Cytomed Therapeutics, TC Biopharm, Hebei Senlang Biotechnology, and Beijing Doing Biomedical Technology Co., Ltd.; and

- *Other oncology therapeutics*: Multiple biotechnology and pharmaceutical companies developing other directly competitive technologies, such as small molecule, antibody, bi-specific antibody, and antibody-drug conjugates.

Government Regulation

As a biotechnology company, we are subject to extensive legal and regulatory requirements. For example, we may need approval from regulatory agencies for our research, development, testing, manufacture, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting and import and export of our product candidates. Relevant regulatory authorities include, but are not limited to, the FDA, the European Medicines Agency, or EMA, an agency of the European Union in charge of the evaluation and supervision of medicinal products, the European Commission, which is the executive arm of the European Union, or EU, and other national regulatory authorities. The United States and certain jurisdictions outside the United States also regulate the pricing and reimbursement of such products. The processes for obtaining marketing approvals in the United States and in other countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

Licensure and Regulation of Biologics in the United States

In the United States, our product candidates are regulated as biological products, or biologics, under the Public Health Service Act, or the PHSA, and the Federal Food, Drug, and Cosmetic Act, or the FDCA, and their implementing regulations promulgated by the FDA. The failure to comply with the applicable requirements at any time during the product development process, including nonclinical testing, clinical testing, the approval process, or post-approval process, may subject us to delays in the conduct of a clinical trial, regulatory review and approval, and/or subject us to administrative or judicial sanctions. Such sanctions may include, but are not limited to, the FDA's refusal to allow us to proceed with clinical testing of our product candidates, refusal to approve pending applications, license suspension or revocation, withdrawal of an approval, receipt of untitled or warning letters, adverse publicity, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, and civil or criminal investigations and penalties brought by the FDA or the U.S. Department of Justice or other governmental entities.

As we seek approval to market and distribute a new biologic in the United States, we generally must satisfactorily complete each of the following steps:

- preclinical laboratory tests, animal studies, and formulation studies all performed in accordance with the FDA's current Good Laboratory Practice, or cGLP, regulations;
- manufacture of clinical investigational product according to current cGMPs;
- submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical trial site before each clinical trial may be initiated, or by a central IRB if appropriate;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the product candidate for each proposed indication, in accordance with the FDA's current Good Clinical Practice, or cGCP, regulations;
- preparation and submission to the FDA of a BLA for marketing approval of our product candidates for one or more proposed indications, including submission of detailed information on the manufacture and composition of our product candidates and proposed labeling;
- review of the BLA by an FDA advisory committee, where applicable;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities, including those of any third-party manufacturers, at which the product, or components thereof, are produced in order to assess compliance with cGMP requirements and to ensure that the facilities, methods, and controls are adequate to preserve the product's identity, strength, quality, and purity, and, if applicable, the FDA's current Good Tissue Practice, or cGTP, for the use of human cell and tissue products;
- satisfactory completion of any FDA audits of clinical trial sites to ensure compliance with cGCPs and the integrity of clinical data in support of the BLA;
- payment of user fees and securing FDA approval of the BLA; and
- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, adverse event reporting, and compliance with any post-approval studies required or requested by the FDA.

Preclinical Studies and Investigational New Drug Application

Before testing any investigational biologic product candidate in humans, our product candidates must undergo preclinical testing. Preclinical tests include laboratory evaluations of product chemistry, formulation, and stability, as well as studies to evaluate the potential for safety, efficacy, and toxicity in animals. The conduct of the preclinical tests and the formulation of the compounds for use in the preclinical testing must comply with federal regulations and/or requirements. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application. An IND is an exemption from the restrictions of the FDCA which permits an unapproved biologic product candidate to be shipped in interstate commerce for use in an investigational clinical trial. The FDA will notify us within 30 days after receipt of our IND application whether we are cleared to begin human clinical trials, unless before that time the FDA has concerns or questions about our product or conduct of the proposed clinical trial, including concerns that human research subjects would be exposed to unreasonable and significant health risks. In such case, we and the FDA must resolve any outstanding concerns before the clinical trials can begin.

If the FDA raises concerns or questions either during this 30-day period, including safety concerns or concerns due to regulatory non-compliance, the FDA may impose a partial or complete clinical hold with respect to our product. Such a clinical hold would delay either a proposed clinical trial, or cause suspension of an ongoing clinical trial, until all outstanding concerns have been adequately addressed, and the FDA has notified us that our clinical trials may proceed or recommence authorized by the FDA.

Human Clinical Trials in Support of a BLA

Our clinical trials involve the administration of our product candidate to patients with the disease to be treated and are conducted under the supervision of a qualified principal investigator in accordance with cGCP requirements. Clinical trials are conducted under study protocols detailing, among other things, the objectives of the clinical trial, inclusion, and exclusion criteria, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and subsequent protocol amendments must be submitted to the FDA as part of the IND.

If we wish to conduct a clinical trial outside of the United States, we may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. When a foreign clinical trial is conducted under an IND, all of the FDA's IND requirements must be met unless waived. If a non-United States clinical trial is not conducted under an IND, we may submit data from a well-designed and well-conducted clinical trial to the FDA in support of our BLA, so long as the clinical trial is conducted in compliance with cGCP and the FDA is able to validate the data from the clinical trial and/or through an onsite inspection if the FDA deems it necessary.

For clinical trials conducted in the United States, each clinical trial must be reviewed and approved by an institutional review board, or IRB, either centrally or individually at each institution at which our clinical trials will be conducted. The IRB will consider, among other things, our clinical trial design, subject informed consent, ethical factors, and the safety of human subjects. The IRB must operate in compliance with FDA regulations governing IRBs. The FDA, the applicable IRB, or we may suspend or terminate a clinical trial at any time for various reasons, including a finding that the clinical trial is not being conducted in accordance with FDA requirements or that the subjects or patients are being exposed to an unacceptable health risk. Some clinical trials receive additional oversight by an independent group of qualified experts organized by us, known as a data safety monitoring board or committee. This group receives and reviews data arising from the clinical trial on an ongoing basis, and may recommend continuation of the clinical trial as planned, changes in clinical trial conduct, or cessation of the clinical trial at designated check points based on such data.

Clinical trials typically are conducted in three sequential phases; however, the phases may overlap or may be combined.

- Phase 1 clinical trials are initially conducted in a limited population of healthy humans or, for our products, in patients, such as cancer patients, in order to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion, and pharmacodynamics, and to identify a recommended phase 2 dose.

- Phase 2 clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications, and to determine dose tolerance and optimal dosage. We may conduct multiple phase 2 clinical trials to obtain information prior to beginning larger and costlier phase 3 clinical trials. The phase 2 clinical trial for our product candidates may serve as the pivotal trial, in which case a phase 3 clinical trial will not be necessary.

- Phase 3 clinical trials are undertaken within an expanded patient population to further evaluate dosage and gather the additional information about effectiveness and safety that is needed to evaluate the overall benefit-risk relationship of the drug and to provide an adequate basis for physician labeling.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data and clinical trial investigators. Annual progress reports detailing the status of clinical trials must be submitted to the FDA. Written IND safety reports must be submitted to the FDA and the investigators within 15 calendar days of receipt by us after determining that the information qualifies for such expedited reporting. IND safety reports are required for serious and unexpected suspected adverse events, findings from other studies or animal or *in vitro* testing that suggest a significant risk to humans in our clinical trials, and any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Additionally, we must notify FDA within seven calendar days after receiving information concerning any unexpected fatal or life-threatening suspected adverse reaction. Other external events may occur that can affect the conduct of our clinical trials, such as the COVID-19 pandemic or government shutdowns.

In some cases, the FDA may approve a BLA for our product candidate but require us to conduct additional clinical trials to further assess the product candidate's safety and effectiveness after approval. Such post-approval trials are typically referred to as phase 4 clinical trials. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of biologics approved under accelerated approval regulations. Failure to exhibit due diligence with regard to conducting phase 4 clinical trials could result in withdrawal of approval for our products. Additionally, a phase 4 clinical trial could be implemented in an effort to evaluate other medical indications for a therapy.

There also are requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries, such as such as *www.ClinicalTrials.gov*. We are required to register and disclose certain clinical trial information, including the product information, patient population, phase of investigation, clinical trial sites and investigators, and other aspects of the clinical trial on *www.ClinicalTrials.gov*. We are also obligated to disclose the results of our clinical trials after completion. Disclosure of the results of these clinical trials can be delayed until the new product or new indication being studied has been approved, up to a maximum of two years.

Compliance with cGMP and cGTP requirements

Before approving a BLA, the FDA typically will inspect the facility or facilities where our product candidates are manufactured. The FDA will not approve a BLA unless it determines that the manufacturing processes and facilities are in full compliance with cGMP requirements and adequate to ensure consistent production of the product within required specifications. The PHSA emphasizes the importance of manufacturing

control for products like biologics whose attributes cannot be precisely defined. Material changes in manufacturing equipment, location, or process post-approval may result in additional regulatory review and approval.

The FDA also will not approve the product if we are not in compliance with cGTP, which are requirements found in FDA regulations that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cell and tissue-based products, or HCT/Ps, which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the cGTP 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.

Manufacturers and others involved in the manufacture and distribution of our products must also register their establishments with the FDA and certain state agencies for products intended for the United States market, and with analogous health regulatory agencies for products intended for other markets globally. Both U.S. and non-U.S. manufacturing establishments must register and provide additional information to the FDA and/or other health regulatory agencies upon their initial participation in the manufacturing process. Any product manufactured by or imported from a facility that has not registered, whether in the United States or not, is deemed misbranded under the FDCA, and could be affected by similar as well as additional compliance issues in other jurisdictions. Manufacturers may be subject to periodic unannounced inspections by government authorities to ensure compliance with cGMPs and other laws. Manufacturers may also have to provide, on request, electronic, or physical records regarding their establishments. Delaying, denying, limiting, or refusing inspection by the FDA or other governing health regulatory agency may lead to a product being deemed to be adulterated. If a manufacturing facility is not in substantial compliance with the applicable regulations and requirements imposed when our product was approved, regulatory enforcement action may be taken, which may include a warning letter or an injunction against shipment of products from the facility and/or recall of products previously shipped.

Review and Approval of a BLA

The results of product candidate development, preclinical testing, and clinical trials, including negative or ambiguous results as well as positive findings, are submitted to the FDA as part of a BLA requesting a license to market our product. Under United States law, the submission of most BLAs is subject to an application user fee and an approved BLA is also subject to an annual program fee. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation and a waiver for certain small businesses.

The FDA has 60 days after submission of a BLA to conduct an initial review to determine whether the BLA is sufficient to accept for filing based on the agency’s threshold determination that the BLA is sufficiently complete to permit substantive review. Once the submission has been accepted for filing, the FDA begins an in-depth review of the application. Under the goals and policies agreed to by the FDA under the Prescription Drug User Fee Act, or the PDUFA, the FDA has ten months in which to complete its initial review of a standard application and respond to us, and six months for a priority review of the application. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs. The review process may often be significantly extended by FDA requests for additional information or clarification. The review process and the PDUFA goal date may be extended by three months if the FDA requests, or if we otherwise provide through the submission of a major amendment, additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

Under the PHSA, the FDA may approve a BLA if it determines that our product is safe, pure, and potent and the facility where our product will be manufactured meets standards designed to ensure that it continues to be safe, pure, and potent.

On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities and any FDA audits of nonclinical study and clinical trial sites to ensure compliance with cGMPs and cGCPs, respectively, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of our product with specific prescribing information for specific indications. If our BLA is not approved, the FDA will issue a complete response letter, which will contain the conditions that must be met in order to secure final approval of the application and, when possible, will outline recommended actions we might take to obtain approval of our BLA. If we receive a complete response letter, we may submit to the FDA information that represents a complete response to the issues identified by the FDA. Such resubmissions are classified under the PDUFA as either Class 1 or Class 2. The classification of a resubmission is based on the information submitted by us in response to an action letter. Under the goals and policies agreed to by the FDA under the PDUFA, the FDA has two months to review a Class 1 resubmission and six months to review a Class 2 resubmission. The FDA will not approve an application until issues identified in the complete response letter have been addressed. Alternatively, if we receive a complete response letter, we may either withdraw our BLA or request a hearing.

The FDA may also refer our BLA to an advisory committee for review, evaluation, and recommendation as to whether our BLA should be approved. In particular, the FDA may refer applications for biologic products that present difficult questions of safety or efficacy to an advisory committee. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates, and provides 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.

If the FDA approves our product, it may limit the approved indications for use of our product. The FDA may also require that contraindications, warnings, or precautions be included in the product labeling. In addition, the FDA may call for post-approval studies, including phase 4 clinical trials, to further assess the product's safety after approval. The FDA may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, specific or special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, certain manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Fast Track, Breakthrough Therapy, Priority Review, and Regenerative Medicine Advanced Therapy Designations

The FDA is authorized to designate certain products for expedited review if such products are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs include fast track designation, breakthrough therapy designation, priority review, and regenerative medicine advanced therapy designation. These designations are not mutually exclusive, and our product candidates may qualify for one or more of these programs. While these programs are intended to expedite product development and approval, they do not alter the standards for FDA approval.

The FDA may designate our product candidate for fast track review if our product candidate is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life-threatening disease or condition, and it can be demonstrated that our product has the potential to address unmet medical needs for such a disease or condition. For fast track product candidates, we may have greater interactions with the FDA, and the FDA may initiate review of sections of our fast track product candidate's application

before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by us, that a fast track product candidate may be effective. We must also provide, and the FDA must approve, a schedule for the submission of the remaining information, and we must pay applicable application user fees. However, the FDA's time period goal for reviewing a fast track application does not begin until the last section of the application is submitted. In addition, the fast track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process, or if our designated product candidate development program is no longer being pursued.

Our products may be designated as breakthrough therapies if they are intended, either alone or in combination with one or more other products, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that our products may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The FDA may take certain actions with respect to breakthrough therapies, including holding meetings with us throughout the development process, providing timely advice to us regarding development and approval, involving more senior staff in the review process, assigning a cross-disciplinary project lead for the review team, and taking other steps to design the clinical trials in an efficient manner. Breakthrough designation may be rescinded if our product candidate no longer meets the qualifying criteria.

The FDA may designate our product candidate for priority review if our product candidate treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness of the treatment, prevention, or diagnosis of such condition. The FDA makes such determination on a case-by-case basis, compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting adverse reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on a marketing application from ten months to six months.

The FDA may designate our product candidates as regenerative medicine advanced therapies if our product candidates are regenerative medicine therapies intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition and preliminary clinical evidence indicates that our product candidates have the potential to address unmet medical needs for such disease or condition. The benefits of a regenerative medicine advanced therapy designation include early interactions with the FDA to expedite development and review, benefits available to breakthrough therapies, potential eligibility for priority review, and accelerated approval based on surrogate or intermediate endpoints. Regenerative medicine advanced therapy designation may be rescinded if our products no longer meet the qualifying criteria.

Accelerated Approval Pathway

The FDA may grant accelerated approval to our product candidates for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that our product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when our product candidate has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality, or IMM, and that our product candidate is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition, and the availability or lack of alternative treatments. Product candidates granted accelerated approval must meet the same statutory standards for safety and efficacy as those granted traditional approval.

For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign, or other measure that is thought to predict clinical benefit but is not itself a measure of clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly

than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a product candidate, such as an effect on IMM. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints but has indicated that such endpoints generally could support accelerated approval where a clinical trial demonstrates a relatively short-term clinical benefit in a chronic disease setting in which assessing durability of the clinical benefit is essential for traditional approval, but the short-term benefit is considered reasonably likely to predict long-term benefit.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a product candidate, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of products for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit.

The accelerated approval pathway is usually contingent on our agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe our product's clinical benefit. As a result, a product candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, would allow the FDA to withdraw the product from the market on an expedited basis. All promotional materials for product candidates approved under accelerated regulations are subject to prior review by the FDA unless the FDA informs us otherwise.

Post-approval Regulation

If regulatory approval for marketing of our product or new indication for an existing product of ours is obtained, we will be required to comply with all regular post-approval regulatory requirements as well as any post-approval requirements that the FDA has imposed as part of the approval process. We will be required to report certain adverse reactions and manufacturing problems to the FDA, provide updated safety and efficacy information and comply with requirements concerning advertising and promotional labeling requirements. Manufacturers of our 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 ongoing regulatory requirements, including cGMP regulations, which impose certain procedural and documentation requirements upon these manufacturers. Accordingly, we and our third-party manufacturers must continue to expend time, money and effort in the areas of production and quality control to maintain compliance with cGMP regulations and other regulatory requirements.

Our products may also be subject to official lot release, meaning that the manufacturer of our products is required to perform certain tests on each lot of the product before the product is released for distribution. If the product is subject to official lot release, the manufacturer must submit samples of each lot, together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot, to the FDA. The FDA may in addition perform certain confirmatory tests on lots of some products before releasing the lots for distribution.

Once a marketing approval is granted for our products, the FDA may withdraw the approval if compliance with regulatory requirements is not maintained or if problems occur after our products reach the market. Later discovery of previously unknown problems with our product, including adverse events of unanticipated severity or frequency, issues with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information, imposition of post-marketing studies or clinical trials to assess new safety risks, or imposition of distribution or other restrictions under a REMS program.

Other potential consequences of a failure to comply with regulatory requirements include:

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

The FDA strictly regulates marketing, labeling, advertising, and promotion of licensed and approved products that are placed on the market. Pharmaceutical products may be promoted only for the approved indications and in accordance with the provisions of the approved label. Although health care providers may prescribe products for off-label uses in their professional judgment, we will be prohibited from soliciting, encouraging, or promoting unapproved uses of our products. Although it may be permissible, under very specific, narrow conditions, for us to engage in non-promotional, non-misleading communication regarding off-label information, such as distributing scientific or medical journal information, the FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and if we are found to have improperly promoted off-label uses, we may be subject to significant liability.

Orphan Drug Designation

Orphan drug designation in the United States is designed to encourage companies to develop products intended for rare diseases or conditions. Pursuant to 21 U.S.C. § 360aa, a rare disease or condition is defined as a condition that affects fewer than 200,000 individuals in the United States or a disease or condition that affects 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 a biologic for the disease or condition will be recovered from sales of the product in the United States. For a biologic to qualify for orphan designation both the biologic and the disease or condition must meet certain criteria specified in the Orphan Drug Act and the FDA's implementing regulations at 21 CFR § 316.

Orphan drug designation would qualify us for financial incentives such as opportunities for grant funding towards clinical trial costs, tax advantages, and user-fee waivers. In addition, if our product candidate receives the first FDA approval for the indication for which it has orphan designation, our product will be entitled to orphan drug exclusivity, which means the FDA may not approve any other application to market the same drug for the same orphan indication for a period of seven years following the date of our product's marketing approval, except in limited circumstances, such as a showing of clinical superiority over the product with orphan exclusivity or where we are unable to ensure sufficient quantities of the approved orphan drug product. If a biologic or drug designated as an orphan product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan product exclusivity.

An application for designation as an orphan product can be made any time prior to the filing of an application for approval to market the product. The FDA's Office of Orphan Products Development, or OOPD, is responsible for approving designation requests. To seek orphan designation, we must submit a request for designation to OOPD with the information required in 21 CFR §§316.20 and 316.21. The granting of an orphan designation request does not alter the standard regulatory requirements and process for obtaining marketing approval. After obtaining an orphan drug designation, our product candidate must then go through the review and approval process for commercial distribution like any other product. Safety and effectiveness of our product candidates must be established through adequate and well-controlled studies.

We may request orphan drug designation of a previously unapproved product or new orphan indication for an already marketed product. In addition, if our product is otherwise the same product as an already approved orphan drug, we may seek and obtain orphan drug designation for the subsequent product for the same rare disease or condition if we can present a plausible hypothesis that its product may be clinically superior to the first drug. More than one sponsor may receive orphan drug designation for the same product candidate for the same rare disease or condition, but each sponsor seeking orphan drug designation must file a complete request for designation with the OOPD.

The period of exclusivity begins on the date that the marketing application is approved by the FDA and applies only to the indication for which the product has been designated. The FDA may approve a second application for the same product for a different use or a second application for a clinically superior version of the product for the same use. The FDA cannot, however, approve the same product made by another manufacturer for the same indication during the market exclusivity period unless it has the consent of the sponsor or the sponsor is unable to provide sufficient quantities.

Pediatric Studies and Exclusivity

Under the Pediatric Research Equity Act of 2003, or PREA, as amended, a BLA or supplement to a BLA, for a product candidate with certain novel characteristics must contain data to assess the safety and effectiveness of the product candidate for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product candidate is safe and effective. The Food and Drug Administration Safety and Innovation Act of 2012, or FDASIA, requires that if we are planning to submit a marketing application for a biological product that includes a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration, we must submit an initial Pediatric Study Plan, or PSP, within 60 days after an end-of-phase 2 meeting or as may be agreed between us and the FDA.

The initial PSP must include, among other things, an outline of the pediatric study or studies that we plan to conduct, including, to the extent practicable, study objectives and design, age groups, relevant endpoints, and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information, along with any other information specified in FDA regulations. The FDA and we must reach agreement on the PSP. We can submit amendments to an agreed-upon initial PSP at any time if changes to the pediatric plan need to be considered based on data collected from nonclinical studies, early phase clinical trials or other clinical development programs.

The FDA may, on its own initiative or at our request, grant deferrals for submission of some or all pediatric data until after approval of our product candidate for use in adults, or full or partial waivers from the pediatric data requirements. Unless otherwise required by regulation, PREA does not apply to product candidates with orphan designation, although, as of 2018, the FDA is no longer granting any additional pediatric-subpopulation orphan drug designations. Notably, PREA will apply to a BLA for a new active ingredient that is orphan-designated if the biologic is a molecularly targeted cancer product intended for the treatment of an adult cancer and is directed at a molecular target that the FDA determines to be substantially relevant to the growth or progression of a pediatric cancer.

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if we submit pediatric data that sufficiently responds to a written request from the FDA for such data. The data do not need to show our product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to be responsive to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or

regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension; instead, this grant of exclusivity extends the regulatory period during which the FDA cannot approve another application.

Biosimilars and Exclusivity

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or the Affordable Care Act, signed into law on March 23, 2010, includes a subtitle called the Biologics Price Competition and Innovation Act of 2009, or BPCIA, which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product in the United States. Starting in 2015, the FDA commenced licensing biosimilars under the BPCIA, and there are currently numerous biosimilars approved in the United States and Europe.

In order for the FDA to approve a biosimilar product, it must find that there are no clinically meaningful differences between the reference product and proposed biosimilar product in terms of safety, purity, and potency. For the FDA to approve a biosimilar product as interchangeable with a reference product, the agency must find that the biosimilar product can be expected to produce the same clinical results as the reference product, and, for products administered multiple times, that the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date of approval of the reference product. The FDA may not approve a biosimilar product until 12 years from the date on which the reference product was approved. Even if a product is considered to be a reference product eligible for exclusivity, another company could market a competing version of that product if the FDA approves a full BLA for such product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of its product.

The BPCIA, however, is complex and only beginning to be interpreted and implemented by the FDA. In addition, proposed legislation has sought to reduce the 12-year reference product exclusivity period. Other aspects of the BPCIA, some of which may impact the BPCIA exclusivity provisions, have also been the subject of recent litigation. As a result, the ultimate impact, implementation, and meaning of the BPCIA is subject to significant uncertainty.

Patent Term Extension

A patent claiming a new biologic product may be eligible for a limited patent term extension, or PTE, under the Drug Price Competition and Patent Term Restoration Act of 1984, or Hatch-Waxman Amendments, which permits a patent restoration of up to five years for patent term lost during product development and FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date of our IND and the submission date of our BLA, plus the time between the submission date of our BLA and the ultimate approval date, less any time we fail to act with due diligence. Patent term extension cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Pursuant to 35 U.S.C. § 156, only one patent covering an approved product, or the use or manufacture thereof, is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question and within 60 days after approval. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The USPTO reviews and approves the application for any patent term extension in consultation with the FDA.

Regulation and Procedures Governing Approval of Medicinal Products in Other Countries

In order to market any product outside of the United States, we must also comply with numerous and comprehensive regulatory requirements of other countries and jurisdictions, regarding quality, safety, and

efficacy, and governing, among other things, clinical trials, marketing authorization, post-authorization requirements, commercial sales, import and export, and distribution of products. Whether or not we obtain FDA approval for our products, we will need to obtain the necessary approvals by the comparable health regulatory authorities in other countries or jurisdictions before we can initiate clinical trials or marketing of our products in those countries or jurisdictions. Specifically, the process governing approval of medicinal products in the EU generally follows the same lines as in the United States, although the approval of a medicinal product in the United States is no guarantee of approval of the same product in the EU, either at all or within the same timeframe as approval may be granted in the United States. The process entails satisfactory completion of preclinical studies and adequate and well-controlled clinical trials to establish the safety and efficacy of a product candidate for each proposed indication. It also requires the submission to the EMA or the relevant competent authorities, of a marketing authorization application, or MAA, and granting of a marketing authorization by the EMA or these authorities before the product can be marketed and sold in the EU.

Coverage, Pricing, and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may seek regulatory approval by the FDA or other government authorities. In the United States and other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use any product candidates we may develop unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of such product candidates. In addition, direct or indirect governmental price regulation may affect the prices that we may charge for product candidates.

United States

Even if any product candidates we may develop obtain approval, sales of such product candidates will depend, in part, on the extent to which third-party payors, including government health programs in the United States, such as Medicare and Medicaid, commercial health insurers, and managed care organizations provide coverage and establish adequate reimbursement levels for such product candidates.

In general, factors a payor considers in determining coverage and reimbursement are based on whether the product is:

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

In the United States, no uniform policy of coverage and reimbursement for biological products, including gene and cell therapy products, exists among third-party payors. As a result, obtaining coverage and reimbursement approval for such a product from a government or other third-party payor is a time-consuming and costly process that could require us to provide to each payor supporting scientific, clinical, and cost-effectiveness data regarding the products' clinical benefits, medical necessity, and risks on a payor-by-payor basis, with no assurance that coverage and adequate reimbursement will be obtained. A decision by a third-party payor not to cover any product candidates we may develop could reduce physician utilization of such product candidates once approved and have a material adverse effect on our sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate

reimbursement rate will be approved, and inadequate reimbursement rates, including significant patient cost sharing obligations, may deter patients from selecting our product candidates. One payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor. Third-party reimbursement and coverage may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. 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 marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

In addition, the United States government, state legislatures and/or local governments are implementing health care cost containment programs, the prices of pharmaceuticals have been a focus in these efforts including price controls, restrictions on coverage and reimbursement, and requirements for substitution of generic products. Adoption of price controls and cost containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit our net revenue and results. In addition, we expect to experience pricing pressures in connection with the sale of any of our product candidates upon their approval due to the trend toward managed healthcare, the increasing influence of health maintenance organizations, cost containment initiatives and additional legislative changes.

European Union

In the EU, the approval process and requirements governing pricing and reimbursement for any product candidate vary greatly between countries and jurisdictions. Some countries provide that biological products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional testing or studies that compare the cost effectiveness of a particular biological product to currently available treatments, or so called health technology assessments, in order to obtain reimbursement or pricing approval.

Some countries, including a number of EU member states, set prices and reimbursement for biological products, with limited participation from the marketing authorization holders. For example, the EU provides options for its member states to restrict the range of biological products for which their national health insurance systems provide reimbursement and to control the prices of biological products for human use. EU Member States may approve a specific price for a biological product or may instead adopt a system of direct or indirect controls on the profitability of the company providing the biological product. Recently, many European countries have increased the level of discounting required in relation to the pricing of biological products and these efforts could continue as countries attempt to manage healthcare expenditures.

Healthcare Law and Regulation

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of pharmaceutical products that are granted marketing approval. Arrangements with providers, consultants, third-party payors, customers, and patients are subject to broadly applicable fraud and abuse laws including anti-kickback laws, false claims laws, and health care provider payment transparency laws, as well as data privacy and security laws and other healthcare laws that may constrain our business and/or financial arrangements.

Restrictions under applicable federal and state healthcare laws and regulations, include but are not limited to the following:

- the United States federal Anti-Kickback Statute, which prohibits, among other things, individuals or entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration, including any kickback, bribe, or certain rebates, directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, either the referral of an individual, or the purchase, lease,

order, arrangement for or recommendation of the purchase, lease, order, arrangement for any good, facility, item or service, for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the federal civil and criminal false claims laws, including the civil United States False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious, or fraudulent or knowingly making, using, or causing to be made or used a false record or statement to avoid, decrease, or conceal an obligation to pay money to the federal government. In addition, the government may assert that a claim including items and services resulting from a violation of the United States federal Anti-Kickback Statute or FDA promotional standards constitutes a false or fraudulent claim for purposes of the United States False Claims Act. The False Claims Act also permits a private individual acting as a "whistleblower" to bring civil whistleblower or qui tam actions against individuals, including biopharmaceutical manufacturers and sellers, on behalf of the federal government alleging violations of the False Claim Act and to share in any monetary recovery. These laws impose criminal and civil penalties on violators;

- the anti-beneficiary inducement law, which prohibits, among other things, the offering or giving of remuneration, which includes, without limitation, any transfer of items or services for free or for less than fair market value, with limited exceptions, to a Medicare or Medicaid beneficiary that the person knows or should know is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of items or services reimbursable by a federal or state health program;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which imposes criminal and civil liability for knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private payors, or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (*e.g.*, public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services;

- HIPAA as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, which impose, among other things, requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information without appropriate authorization. In addition, state and non-United States laws govern the privacy and security, including the use, storage, retention, protection, disclosure, transfer, and other processing of health and other personal information in certain circumstances, many of which differ from each other in significant ways and may not have the same requirements, thus complicating efforts to comply with their respective provisions;

- the physician payment transparency requirements known as the federal Physician Payments Sunshine Act, or Open Payments program, created under the Affordable Care Act, which requires certain manufacturers of drugs, devices, biologics, and medical supplies to report annually to the Centers for Medicare & Medicaid Services, or CMS, information related to payments, including certain product development activities such as clinical trials, and other transfers of value made by

that entity to physicians, currently defined to include doctors, dentists, optometrists, podiatrists, and chiropractors, and teaching hospitals, and requires certain manufacturers and applicable group purchasing organizations to report ownership and investment interests held by physicians or their immediate family members. Failure to submit required information may result in civil monetary penalties for all payments, transfers of value or ownership or investment interests that are not timely, accurately, and completely reported in an annual submission. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made to certain non-physician providers, such as physician assistants and nurse practitioners;

- federal government price reporting laws, which require us to calculate and report complex pricing metrics in an accurate and timely manner to government programs. Such laws may not only affect coverage, reimbursement, and pricing for our product candidates, but can also result in civil penalties for late or incorrect reports;

- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;

- the FDCA, which prohibits, among other things, the commercialization of adulterated or misbranded drugs and medical devices and the PHSA, which prohibits, among other things, the commercialization of biological products unless a biologics license is in effect;

- the Foreign Corrupt Practices Act which prohibits companies and their intermediaries from making, or offering or promising to make improper payments to non-United States officials for the purpose of obtaining or retaining business or otherwise seeking favorable treatment;

- certain state and other laws that require pharmaceutical companies to comply with the state standards or pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring pharmaceutical manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures;

- certain state and other laws that govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and may be broader in scope than their federal equivalents.

Numerous federal and state laws and regulations, including federal health information privacy laws, state data breach notification laws, state health information privacy laws and federal and state consumer protection laws (*e.g.*, Section 5 of the Federal Trade Commission Act), that govern the collection, use, disclosure, and protection of health-related and other personal information could apply to our operations or the operations of our collaborators and third-party providers. For example, California recently enacted the California Consumer Privacy Act, or the CCPA, which became effective on January 1, 2020. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Additionally, the California Privacy Rights Act, or the CPRA, recently passed in California, which will amend the CCPA to impose additional data protection obligations on companies doing business in California, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection

agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions will go into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. In the United States, states are constantly amending existing laws, requiring attention to frequently changing regulatory requirements.

Healthcare Reform

A primary trend in the United States healthcare industry and elsewhere is cost containment. There have been a number of federal and state proposals during the last few years that apply to the pricing of pharmaceutical and biopharmaceutical products, limit coverage and reimbursement for drugs and other medical products, standardize access to third-party insurance coverage, and address government control and other changes to the healthcare system in the United States. The federal and state governments continually propose and pass legislation designed to reduce the cost of healthcare, and future amendments and new proposals may affect the commercialization of any of our product candidates in ways that we cannot foresee.

For example, in March 2010, the United States Congress enacted the Affordable Care Act, which, among other things, sought to expand access to, and standardize, commercial insurance coverage within the United States and included changes to the coverage and payment for products under government health care programs.

Among the provisions of the Affordable Care Act that may be of importance to our potential product candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic products, apportioned among these entities according to their market share in certain government healthcare programs, although this fee would not apply to sales of certain products approved exclusively for orphan indications;

- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;

- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of "average manufacturer price," or AMP, for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices and extending rebate liability to prescriptions for individuals enrolled in Medicare Advantage plans;

- addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for products that are inhaled, infused, instilled, implanted or injected;

- expanded the types of entities eligible for the 340B drug discount program;

- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide a 70% point-of-sale-discount off the negotiated price of applicable products to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient products to be covered under Medicare Part D, increased pursuant to the Bipartisan Budget Act of 2018 which became effective as of 2019;

- the establishment of a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and

- the establishment of the Center for Medicare and Medicaid Innovation within CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription product spending.

Since its enactment, there have been numerous judicial, administrative, executive, and legislative challenges to certain aspects of the Affordable Care Act, and we expect there will be additional challenges and amendments to the Affordable Care Act in the future. It is unclear whether the Affordable Care Act will be overturned, repealed, replaced, or further amended. We cannot predict what effect further changes to the Affordable Care Act would have on our business.

Recently, CMS finalized regulations that give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the Affordable Care Act for plans sold through such marketplaces. For example, in May 2019, CMS issued a final rule to allow Medicare Advantage Plans the option of using step therapy, a type of prior authorization, for Part B drugs beginning January 1, 2020. It is unclear what type of impact, if any, efforts such as this will have on our business in the future.

Beyond the Affordable Care Act, other legislative measures have also been enacted that may impose additional pricing and product development pressures on our business. For example, on May 30, 2018, the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act, but the manufacturer must develop an internal policy and respond to patient requests according to that policy. We expect that additional foreign, federal, and state healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in limited coverage and reimbursement and reduced demand for our products, once approved, or additional pricing pressures.

There has also been heightened governmental scrutiny over the manner in which manufacturers set prices for, and promote, their marketed products, which has resulted in several recent Congressional inquiries, proposed bills and new regulations designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products. For example, the U.S. Department of Health and Human Services Office of Inspector General, or the OIG, issued amended anti-kickback “safe harbor” regulations, currently delayed until 2023, which may affect the manner in which manufacturers on the one hand and third-party payors and their agents on the other may enter into rebate agreements with respect to product coverage. Furthermore, in 2020, while the OIG issued new safe harbors protecting remuneration furnished to third parties under “value-based” arrangements and CMS adopted regulations governing the treatment of value-based pricing arrangements under the Medicaid rebate program, the safe harbor regulations exclude manufacturers from protection and may affect the manner in which future products are priced and contracted. Additional proposed legislation has included terms that would remove the current 100% “cap” on Medicaid rebate liability with respect to a product, which may constrain manufacturers’ ability to increase prices in the future. It is unclear what type of impact, if any, regulations such as this will have on our business in the future.

Individual states in the United States have also become increasingly active in enacting legislation and implementing regulations designed to control pharmaceutical and biological 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 cannot predict what healthcare reform initiatives may be adopted in the future. Additional federal, state, and foreign legislative and regulatory developments are likely and we expect ongoing initiatives to increase pressure on drug pricing. Such reforms could have an adverse effect on anticipated revenues from product candidates and may affect our overall financial condition and ability to develop product candidates.

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, all 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.

Facilities

Our corporate headquarters are located in Berkeley, California, where we lease approximately 61,735 square feet of research and development, laboratory, and office space pursuant to a lease agreement executed in March 2021 and expiring in March 2031. We have the ability to extend this lease for an additional five years until March 2036. We believe that our existing facilities are adequate for our near-term needs, and that suitable additional facilities will be available in the future if and when needed.

Employee and Human Capital Resources

As of July 12, 2021, we had 76 employees. Of these employees, 59 are primarily engaged in research and development activities and 37 of our research and development personnel have one or more advanced degrees. None of our employees is represented by a labor union or party to a collective bargaining agreement. We consider our relationship with our employees to be good.

We recognize that attracting, motivating, and retaining talent at all levels is vital to our continued success. Our employees are a significant asset and we aim to create an equitable, inclusive and empowering environment in which our employees can grow and advance their careers, with the overall goal of developing, expanding, and retaining our workforce to support our current pipeline and future business goals. By focusing on employee retention and engagement, we also improve our ability to support our clinical trials, our pipeline, our platform technologies, and our business and operations, while protecting the long-term interests of our stockholders. Our success depends on our ability to attract, engage, and retain a diverse group of employees. We value innovation, passion, data-driven decision making, persistence, and honesty, and we are building an inclusive environment where our employees can thrive and be inspired to make exceptional contributions to bring therapies to patients.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, motivating, and integrating our existing and future employees. The principal purposes of our equity incentive plans are to attract, retain, and motivate employees through grants of stock-based compensation awards and payments of cash-based performance bonus awards, which motivate our employees to perform to the best of their abilities and achieve our objectives. We are committed to providing a competitive and comprehensive benefits package to our employees. Our benefits package provides a balance of overall protection along with the flexibility to meet the individual health and wellness needs of our employees. We plan to continue to refine our efforts related to optimizing our use of human capital as we grow, including improvements in the way we hire, develop, motivate, and retain employees.

Corporate Social Responsibility

Diversity, Equity, and Inclusion

We are committed to cultivating, fostering, and preserving a culture of diversity, equity, and inclusion, or DEI. We foster an inclusive environment through respect, collaboration, and candid 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 embrace differences in experience and background, and we welcome a diversity of opinions when making decisions. We would not be who we are today without the diversity of our team.

As of July 12, 2021, 57% of our employees were self-reportedly women. Of our director-level and above employees, 57% were self-reportedly women and 38% of this group self-reported other than white. The ratio of men to women is fairly balanced at each level of our organization except for our research staff where there are more women than men. In addition, as of July 12, 2021, 45% of all our employees were self-reportedly ethnic or racial minorities, with 24% self-identifying as Asian, 7% Black or African American, 7% Hispanic or Latinx, and 8% of other minority groups or two or more races. Our employees span multiple age brackets and bring their unique perspectives and experiences to our organization. As of July 12, 2021, the average age of our employees is 41.2 years old and 51% of our workforce is under 40 years of age. Although we are proud of our efforts and metrics to date, we recognize that there is still more work to be done until the diversity of our workforce matches the diversity of the Bay Area.

To champion our efforts in this area, we recently formed an Inclusion Committee comprised of employees from various departments, backgrounds, and levels within our organization. The Inclusion Committee sets forth our commitment to the importance of DEI and the responsibility of our employees to treat others with dignity and respect at all times. All employees are provided diversity awareness training and unconscious bias training to enhance their knowledge to fulfill this responsibility, in addition to mandatory sexual harassment training. The Inclusion Committee works to identify gaps, respond to feedback provided by peers and present suggestions on our hiring and retention practices and policies to encourage and enforce an environment in which all employees feel included and empowered to achieve their best. Management has committed time and resources for this ongoing initiative.

Participation in Our Community

Our headquarters are located in Berkeley, California, and many of our employees are alumni of local universities and some have grown up in the San Francisco Bay Area and attended local schools. Our employees are talented and passionate people who are committed to making a difference in our community and beyond. As a company, we actively participate in outreach efforts to increase opportunities for underrepresented groups, including hosting and providing volunteers for science, technology, engineering, and mathematics, or STEM, programs at local elementary, junior high and high schools as well as community colleges and universities. Many of our employees speak at local schools about careers in biotechnology and we have hosted students at our facility to engage them in aspects of biotechnology to which they may not have been previously exposed. We look for opportunities to foster the growth of future scientists and a love of science.

We provide each of our employees with eight hours of paid volunteer time each year, which can be used for participating in school activities, voter registrations, environmental activities, and the like.

The Herd at Caribou

We at Caribou refer to ourselves as “the herd.” We encourage and value social interactions among the herd. To this end, until the COVID-19 pandemic, we met for quarterly events, including a company-organized

San Francisco Bay shoreline clean-up effort. During the COVID-19 pandemic, we held quarterly events virtually, such as chocolate tastings and ramen cooking. We also sponsor a monthly “fun run” for employees to either run or walk to the shoreline or in the Berkeley hills. For several years, we have offered yoga for our employees, and we have continued this virtually.

We are environmentally conscious. With this in mind, we strive to mitigate our impact on the environment where possible and pursue innovative ways to grow our business while minimizing our environmental footprint. The City of Berkeley requires companies with 10 or more employees to have a commuter benefits program in place and we offer pre-tax commuter benefits to ride public transportation, which is connected to our facility through various free shuttle services. Additionally, we provide bicycle vouchers to employees who bike to work and have bike repair tools on site as well as bike storage areas. There are six electric vehicle charging stations in the parking lot adjacent to our facility. Our facility is equipped with water stations that filter water to discourage the use of plastic bottles. All refuse generated at our company is sorted among recycle, compost, and landfill. We have already moved to electronic documentation and files in many functions and are in the process of completing our transition to a mostly paperless workplace.

Legal Proceedings

From time to time, we may be subject to various legal proceedings and claims that arise in the ordinary course of our business activities. Regardless of the outcome, litigation can have a material adverse effect on us because of defense and settlement costs, diversion of management resources, and other factors. Except as described below, we are not currently a party to any legal proceeding, the outcome of which, we believe, if determined adversely to us, would individually or taken together have a material adverse effect on our business, operating results, cash flows or financial condition.

Intellia Arbitration

On October 16, 2018, Intellia initiated an arbitration proceeding, or the Intellia Arbitration, with JAMS asserting that we had violated the terms and conditions of the License Agreement, by and between Caribou and Intellia, dated July 16, 2014, as amended. The Intellia Arbitration involves whether two patent families relating, respectively, to CRISPR-Cas9 chRDNA guides and Cas9 scaffolds, are included in the Intellia Agreement. On September 19, 2019, we received an interim award from the arbitration panel determining that the two patent families are included in the Intellia Agreement, but the panel granted us an exclusive leaseback to Cas9 chRDNA guides under economic terms to be negotiated by the parties. On February 6, 2020, the arbitration panel clarified that the leaseback relates solely to our CB-010 product candidate, and instructed the parties to negotiate economic terms based on a leaseback of that scope. On June 16, 2021, we entered into the Leaseback Agreement with Intellia, which resolved the dispute, and, on July 21, 2021, the arbitration panel dismissed the Intellia Arbitration with prejudice.

MANAGEMENT

Executive Officers and Directors

Our executive officers and directors, and their ages and positions as of the date of this prospectus, are as set forth below:

Name	Age	Position(s)
Executive Officers		
Rachel E. Haurwitz, Ph.D.	36	President and Chief Executive Officer, Director
Steven B. Kanner, Ph.D.	62	Chief Scientific Officer
Barbara G. McClung, J.D.	66	Chief Legal Officer and Corporate Secretary
Jason V. O'Byrne, M.B.A.	53	Chief Financial Officer
Non-Employee Directors		
Scott Braunstein, M.D.	57	Director
Andrew Guggenhime, M.B.A.	52	Director
Jeffrey Long-McGie, M.B.A.(1)	45	Director
Natalie R. Sacks, M.D.	56	Director

(1) Mr. Long-McGie intends to resign from our board of directors in connection with the closing of this offering. Mr. Long-McGie's decision to resign as a director was not the result of any disagreement with us on any matter relating to our operations, policies, or practices.

Executive Officers

Rachel E. Haurwitz, Ph.D. is a co-founder of Caribou and has served as our President and Chief Executive Officer and a director of our company since its inception in October 2011. Dr. Haurwitz is an inventor on patents and patent applications covering multiple CRISPR-based technologies and has co-authored several scientific papers characterizing CRISPR-Cas systems including in *Science*. Dr. Haurwitz currently serves on the board of directors of the Biotechnology Industry Organization, a not-for-profit organization. Dr. Haurwitz previously served on the board of directors of Intellia, of which she is a co-founder, from July 2014 to November 2016. She received her A.B. degree in Biological Sciences from Harvard College. Dr. Haurwitz received her Ph.D. in Molecular and Cell Biology from the University of California, Berkeley, where she completed her thesis research in the laboratory of Dr. Jennifer A. Doudna. We believe that Dr. Haurwitz is qualified to serve as a director based on her operational and historical expertise and experience with Caribou gained from her role as co-founder, President and Chief Executive Officer, and member of our board of directors combined with her knowledge of CRISPR science.

Steven B. Kanner, Ph.D. has served as our Chief Scientific Officer since June 2017. Before joining Caribou, Dr. Kanner served as Vice President, Head of Biology at Arrowhead Pharmaceuticals, Inc., from September 2013 to June 2017, leading a department in discovery of RNAi therapeutics for oncology, genetic diseases, and other indications. Prior to joining Arrowhead, he served in various positions of increasing responsibility in both oncology and inflammation drug discovery at Bristol-Myers Squibb, from July 1990 to May 2003, Agensys Corporation (which was acquired by Astellas Pharma Inc. in 2007), from May 2003 to June 2010, and Astex Pharmaceuticals, Inc., from December 2010 to July 2012. Dr. Kanner has authored over 85 publications in both peer-reviewed journals and books and is an inventor on numerous U.S. and foreign patents and patent applications. He received his B.S. degree in Genetics from the University of California, Berkeley, and his Ph.D. in Immunology and Microbiology from the University of Miami's Miller School of Medicine. He was awarded an NIH post-doctoral fellowship that he completed at the University of Virginia.

Barbara G. McClung, J.D. has served as our Chief Legal Officer and Corporate Secretary since April 2015. Additionally, Ms. McClung currently teaches biotechnology law at the University of California, Berkeley, School of Law. Prior to joining Caribou, she was Vice President, General Counsel, and Corporate Secretary of Intarcia Therapeutics, Inc., from January 2007 to May 2013. Ms. McClung was Chief Legal Officer and Corporate Secretary at Cygnus, Inc., from January 1998 to December 2005. Ms. McClung began her career as a patent

attorney with E. I. du Pont de Nemours and Company from May 1987 to May 1989, and then was an associate at Townsend & Townsend from June 1989 to August 1990. Ms. McClung was Corporate Patent Counsel – Vaccines Division at Chiron Corporation from August 1990 to January 1998. Ms. McClung is a registered patent attorney before the United States Patent and Trademark Office. She received her B.A. from the University of California, San Diego, her M.A. from the University of Pennsylvania, and her J.D. from the University of Pennsylvania Law School, and is a member of the California, Delaware, and Pennsylvania state bars.

Jason V. O'Byrne, M.B.A. has served as our Chief Financial Officer since February 2021. Prior to joining Caribou, he was Senior Vice President of Finance at Audentes Therapeutics, Inc., from April 2020 to February 2021, where he led finance for the gene therapy company. From April 2019 to April 2020, Mr. O'Byrne served as Vice President of Finance at Audentes. Before joining Audentes, he spent 13 years with Genentech, Inc., a member of the Roche Group, from February 2005 to December 2018, holding finance leadership and executive positions across the research, development, manufacturing, business development and commercial functions. Earlier in his career, Mr. O'Byrne served as regional controller with General Chemical Corporation, from September 2002 to January 2005, and as an engineer with General Motors, from September 1999 to September 2001. He received a B.A.Sc. in Mechanical Engineering from the University of British Columbia, and an M.B.A. from New York University's Stern School of Business.

Non-Employee Directors

Scott Braunstein, M.D. has served on our board of directors since June 2021. Dr. Braunstein currently serves as President and Chief Executive Officer and a member of the board of directors of Marinus Pharmaceuticals, positions he has held since August 2019 and September 2018, respectively. He has served as an operating partner at Aisling Capital since August 2015. From July 2015 to March 2018, Dr. Braunstein served as Chief Strategy Officer and Chief Operating Officer at Pacira Pharmaceuticals, Inc. Prior to Pacira, Dr. Braunstein served as a healthcare portfolio manager at Everpoint Asset Management from September 2014 to February 2015 and spent 12 years from February 2002 to June 2014 with J.P. Morgan Asset Management as a healthcare analyst and managing director on the U.S. equity team and as portfolio manager of the J.P. Morgan Global Healthcare Fund. Dr. Braunstein has also served on the board of directors of Trevena, Inc. since September 2018. He previously served as a board member of Constellation Pharmaceuticals from February 2019 to July 2021, Ziopharm Oncology, Inc. from September 2018 to November 2020, Esperion Therapeutics, Inc. from June 2015 to April 2020, and Protara Therapeutics, Inc. from May 2018 to July 2020. Dr. Braunstein began his career as a physician at the Summit Medical Group and as assistant clinical professor at Albert Einstein College of Medicine and Columbia University Medical Center. He received his medical degree from the Albert Einstein College of Medicine and his B.S. from Cornell University. We believe that Dr. Braunstein is qualified to serve on our board of directors based on his expertise and experience in governing, leading, and investing in biopharmaceutical companies.

Andrew Guggenhime, M.B.A. has served on our board of directors since April 2021. Mr. Guggenhime currently serves as the President and Chief Financial Officer at Vaxcyte, Inc., positions he has held since December and May 2020, respectively. Prior to joining Vaxcyte, he served as Chief Financial Officer of Dermira, Inc. from April 2014 through the acquisition of the company by Eli Lilly and Company in February 2020. Prior to Dermira, Mr. Guggenhime served as Chief Financial Officer for CardioDx, Inc. from September 2011 to April 2014 and as a director of the company from April 2014 to July 2016. He also served as Chief Financial Officer for Calistoga Pharmaceuticals, Inc., from September 2010 to April 2011, which was acquired by Gilead Sciences, Inc. in 2011, and as Chief Financial Officer for Facet Biotech Corporation, from December 2008 to June 2010, which was acquired by Abbott Laboratories in April 2010. Mr. Guggenhime previously served as Chief Financial Officer of PDL BioPharma, Inc., until Facet Biotech was spun off from PDL BioPharma in December 2008. Prior to joining Facet Biotech, he served as Chief Financial Officer for Neoforma, Inc., which was acquired by Global Healthcare Exchange, LLC in March 2006. Mr. Guggenhime began his career in financial services at Merrill Lynch & Co. and Wells Fargo & Company. He received his B.A. in international politics and economics from Middlebury College and his M.B.A. from the J.L. Kellogg Graduate School of Management at Northwestern University. We believe that Mr. Guggenhime is qualified to serve on our board of directors based on his more than two decades of finance, strategic, and operational leadership experience at both private and public healthcare companies.

Jeffrey Long-McGie, M.B.A. has served on our board of directors since March 2021. Mr. Long-McGie has been a Managing Director at Ridgeback Capital Investments LP since January 2021. Previously, he served as a Portfolio Manager at JLM Healthcare Advisors, from July 2011 to December 2020, Senior Vice President at Ridgeback Capital Management, from January 2008 to July 2011, Analyst at Ridgeback Capital Management, from April 2006 to January 2008, Analyst at Sigma Capital, from December 2005 to April 2006, Vice President of Business Development at Andrx Corp., from April 2005 to November 2005, Vice President/Specialty Pharmaceutical Analyst at ThinkEquity Partners, from December 2003 to April 2005, Associate Analyst/Pharmaceuticals, A.G. Edwards & Sons, from September 2000 to December 2003, and Intern, Equity Research/Pharmaceuticals, A.G. Edwards & Sons, from May 2000 to August 2000. Mr. Long-McGie started his career in the biotechnology industry with research positions at Onyx Pharmaceuticals Inc., from January 1998 to June 1998, and Genencor International, Inc., from May 1997 to August 1997. He received his B.S. in Microbiology from California State University, Chico, his M.A. in Biology & Biomedical Sciences from Washington University in St. Louis, and his M.B.A. from Saint Louis University. We believe that Mr. Long-McGie is qualified to serve on our board of directors based on his extensive pharmaceutical- and biotechnology-focused investment-related experience.

Natalie R. Sacks, M.D. has served on our board of directors since May 2018. Dr. Sacks is an oncologist and experienced drug developer. She currently is the Chief Medical Officer at Harpoon Therapeutics, Inc. Prior to joining Harpoon, Dr. Sacks held various development leadership roles at multiple companies including Onyx Pharmaceuticals Inc. (acquired by Amgen Inc. in 2013), from April 2011 to February 2014, Aduro, Inc., from September 2016 to September 2018, Exelixis, Inc., from September 2009 to March 2011, and Cell Genesys, Inc., from November 2002 to April 2009. She has been responsible for all aspects of development including the late-stage development of oncology therapeutics Kyprolis from Onyx Pharmaceuticals Inc. and Cometriq from Exelixis, Inc. Dr. Sacks also currently serves on the board of directors of Zymeworks, Inc. and STipe Therapeutics. Dr. Sacks held a faculty appointment at the University of California, San Francisco from October 2004 to October 2016, where she was a volunteer assistant clinical professor of medicine in the Division of Hematology/Oncology. She received her B.A. in Mathematics from Bryn Mawr College, her M.S. Biostatistics from Harvard University School of Public Health, and her M.D. from the University of Pennsylvania School of Medicine. We believe that Dr. Sacks is qualified to serve on our board of directors based on her extensive experience developing late-stage oncology therapeutics and her experience serving as a director of a public company and in executive leadership roles at multiple companies.

Scientific Advisory Board

Our management team is actively advised by our eight-member Scientific Advisory Board, or SAB, which includes our co-founders Drs. Jennifer A. Doudna and Martin Jinek. We have assembled a team of advisors with know-how in complementary disciplines necessary for the development of our technologies and therapeutic product capabilities. Our SAB includes world experts in immuno-oncology therapeutics, T cell metabolism and tumor interactions, iPSC biology and differentiation, clinical trial development, and patient care. Our SAB regularly meets with the senior members of our research and development teams to provide insight and advice on our research and development efforts. In addition, we regularly consult with individual members of our SAB on matters pertaining to their respective areas of expertise. We believe that our advisory board's expertise is a valuable asset for our discovery and development of novel therapeutic candidates.

Jennifer A. Doudna, Ph.D. is one of our co-founders. She is a professor of Molecular and Cell Biology and Chemistry at the University of California, Berkeley where she is the Li Ka Shing Chancellor's Chair in Biomedical and Health Sciences; the President of the Innovative Genomics Institute; an Investigator at the Howard Hughes Medical Institute; a Senior Investigator at the Gladstone Institutes; a Faculty Scientist in the Physical Biosciences Division of Lawrence Berkeley National Laboratory; and a member of the National Academy of Sciences and the American Academy of Arts and Sciences. Her research seeks to understand how non-coding RNA molecules control the expression of genetic information and she has published extensively in the field of CRISPR-Cas biology. Dr. Doudna's work and that of her collaborator Emmanuelle Charpentier was recognized by the award of the Nobel Prize in Chemistry in 2020 as well as a 2015 Breakthrough Prize. Her work on CRISPR-Cas systems has also been recognized with the Paul Janssen Award for Biomedical Research, a Lurie

Prize in Biomedical Sciences, and the Princess of Asturias award. Dr. Doudna was also named to the 2015 TIME Magazine's TIME 100 list of the 100 most influential people in the world. After serving as a member of the Yale University faculty for eight years, during which time she was promoted to Henry Ford II Professor of Molecular Biophysics and Biochemistry, she joined the UC Berkeley faculty in 2002. Dr. Doudna received a B.A. in Biochemistry from Pomona College and a Ph.D. in Biochemistry from Harvard University.

Martin Jinek, Ph.D. is one of our co-founders and an Assistant Professor at the University of Zurich in the Department of Biochemistry. His research focuses on molecular mechanisms that orchestrate cellular regulation through protein-RNA interactions. His studies include biochemical and structural approaches to investigate these processes at the atomic level. Dr. Jinek has contributed significantly to the field of CRISPR biology both through basic discovery and through the invention of new CRISPR-based technologies. He has won both the Human Frontier Science Program Fellowship and the EMBO Long-term Fellowship. Dr. Jinek received a B.A. in Natural Sciences, an M.S. in Chemistry from the University of Cambridge, as well as a Ph.D. in Structural Biology from the University of Heidelberg.

Ami Bhatt, M.D., Ph.D. is an Assistant Professor of Medicine (Hematology) and of Genetics at Stanford University where her research focuses on inspecting, characterizing, and dissecting the microbe-human interface. Dr. Bhatt is also the Director of Global Oncology at the Center for Innovation in Global Health at Stanford and the co-founder of the non-profit organization Global Oncology with the goal of improving cancer outcomes for patients in impoverished settings. Dr. Bhatt received her M.D. in Medicine and Ph.D. in Biochemistry and Molecular Biology from the University of California, San Francisco and completed residency and chief residency in Internal Medicine at Brigham and Women's Hospital. Dr. Bhatt completed her post-doctoral fellowship at the Broad Institute of Harvard and Massachusetts Institute of Technology and completed her hematology/oncology fellowship at the Dana-Farber Cancer Institute.

Jeffrey Rathmell, Ph.D. is a Director of the Vanderbilt Center for Immunobiology and serves as the Associate Director of the Institute of Infection, Immunology and Inflammation at the Vanderbilt University Medical Center where he is also the co-leader of the Molecular Pathology and Immunology Ph.D. training program. His studies focus on manipulating mechanisms to control inflammatory diseases and anti-tumor immune responses and to understand how metabolism is intimately linked to nearly all aspects of cell function. Prior to joining the Vanderbilt University Medical Center, Dr. Rathmell was a member of the Duke Molecular Physiology Institute and was involved with the departments of Pharmacology, Cancer Biology, and Immunology. He received a Ph.D. in Immunology on B cell tolerance and death mechanisms at Stanford University. Dr. Rathmell completed postdoctoral studies at the University of Chicago and the University of Pennsylvania.

Noopur Raje, M.D. is a Professor of Medicine at Harvard Medical School, the director of the Center for Multiple Myeloma, and the Rita Kelley Chair in Oncology at the Massachusetts General Hospital Cancer Center. She is a physician scientist with a primary focus on multiple myeloma and related plasma cell disorders. Dr. Raje has focused on developing new promising therapies for multiple myeloma. Her laboratory efforts are aimed at identifying cellular signaling pathways that contribute to the survival and proliferation of myeloma cells in the bone environment and designing trials to specifically harness these. She is the co-chair of the National Cancer Institute steering committee for multiple myeloma and a board member of the International Myeloma Society. Dr. Raje received her M.D. from B.J. Medical College at Pune University. She trained in internal medicine at Massachusetts General Hospital and completed a fellowship in hematology and medical oncology at the Dana-Farber Cancer Institute.

Katy Rezvani, M.D, Ph.D. is the Sally Cooper Murray Chair in Cancer Research, Professor of Medicine, Chief of Section for Cellular Therapy, Director of Translational Research, and Director of the GMP Facility at MD Anderson Cancer Center. She also serves as Executive Director of MD Anderson's Adoptive Cell Therapy Platform. Her research laboratory focuses on the role of NK cells in mediating immunity against hematologic and solid tumors. The goal of this research is to understand mechanisms of tumor-induced NK cell dysfunction and to develop strategies to genetically engineer NK cells to enhance their *in vivo* anti-tumor activity and persistence. Findings from Dr. Rezvani's lab have led to the approval and funding of several investigator-initiated clinical

trials of NK cell immunotherapy in patients with hematologic malignancies and solid tumors, as well as the first-in-human clinical trial of off-the-shelf CAR-transduced cord blood NK cells in patients with relapsed/refractory lymphoid malignancies. Dr. Rezvani completed her medical training at University College London, followed by Fellowships of the Royal College of Physicians and the Royal College of Pathologists of the United Kingdom, a Ph.D. in Immunology from Imperial College London, and postdoctoral studies at the National Institutes of Health.

Christopher Sturgeon, Ph.D. is an Associate Professor at the Icahn School of Medicine at Mount Sinai. His studies focus on characterizing the signal pathways that control human pluripotent stem cell differentiation towards hematopoietic stem/progenitors and how this impacts NK cell development and function. Prior to joining Mount Sinai, Dr. Sturgeon was a member of the Washington University School of Medicine Hematology Division. He received a Ph.D. in Biochemistry on cell cycle regulation at the University of British Columbia. Dr. Sturgeon completed postdoctoral studies at the McEwen Centre for Regenerative Medicine at the University of Toronto where he studied pluripotent stem cell-derived hematopoiesis.

Cameron Turtle, M.B.B.S., Ph.D. is an Associate Member at the Fred Hutchinson Cancer Research Center, or FHCRC, and an Associate Professor at the University of Washington, or UW. He serves as an attending physician on the Hematopoietic Cell Transplant, or HCT, Service and the Immunotherapy Service at FHCRC, Seattle Cancer Care Alliance, and the UW Medical Center. His research laboratory in the Clinical Research Division at FHCRC is focused on understanding the characteristics of distinct subsets of human CD8+ T cells, their potential utility for tumor immunotherapy, and their role in immune reconstitution after HCT. Dr. Turtle is Principal Investigator and IND sponsor of several investigator-initiated clinical trials of CD19-targeted CAR-modified T cell therapy for patients with B cell malignancies. He completed medical training at the University of Sydney, Australia, followed by Fellowships of the Royal Australasian College of Physicians and the Royal College of Pathologists of Australasia and a Ph.D. in Immunology.

Board Composition and Election of Directors

Our board of directors currently consists of five members. As discussed below, certain of our directors were appointed pursuant to a voting agreement that we have entered into with the holders of our convertible preferred stock and certain holders of our common stock, as described below. The voting agreement will terminate upon the closing of this offering and there will be no further contractual obligations regarding the election of any of our directors. Each director is currently elected to the board of directors to hold office until their successors have been elected and qualified or until the earlier of their resignation or removal.

There are no family relationships among any of our directors and executive officers.

Voting Arrangements

The election of the members of our board of directors is currently governed by the amended and restated voting agreement that we entered into with certain holders of our common stock and convertible preferred stock and the related provisions of our amended and restated certificate of incorporation. Pursuant to our amended and restated voting agreement effective in March 2021 and amended and restated certificate of incorporation, our current directors were elected or appointed as follows:

- Mr. Long-McGie was appointed as the designee of Ridgeback Capital Investment L.P., an investor in our Series C convertible preferred stock financing;
- Dr. Haurwitz was elected and designated as our then-serving and current Chief Executive Officer;
- Dr. Sacks was elected by a majority of our common stockholders and currently serves as an independent director;

- Dr. Braunstein was elected by a majority of our common stockholders and preferred stockholders, voting together as a single class, and he currently serves as an independent director;

- Mr. Guggenhime was elected by a majority of our common stockholders and preferred stockholders, voting together as a single class, and he currently serves as an independent director;

- One board seat is vacant and reserved for the majority in interest of our Series A, Series A-1, and Series B convertible stockholders, voting together as a single class, on an as-converted basis, who shall be designated by management and approved by a majority of the other directors; and

- One board seat is vacant and reserved for a board designee of PFM Health Sciences, LP and its affiliate funds, investors in our Series C convertible preferred stock financing.

Our amended and restated voting agreement will terminate and the provisions of our current amended and restated certificate of incorporation by which our directors were elected will be amended and restated in connection with this offering. After this offering, the number of directors will be fixed by our board of directors, subject to the terms of our amended and restated certificate of incorporation and our amended and restated bylaws that will become effective immediately prior to the completion of this offering. Each of our directors is currently elected to the board of directors and will continue to serve as a director until the election and qualification of their successor, or until their earlier death, resignation, or removal.

Classified Board of Directors

In accordance with our amended and restated certificate of incorporation, which will be in effect upon the closing of this offering, our board of directors will be divided into three classes of directors. At each annual meeting of stockholders, a class of directors will be elected for a three-year term to succeed the class whose terms are then expiring, to serve from the time of election and qualification until the third annual meeting following their election or until their earlier death, resignation, or removal. Upon the closing of this offering, our directors will be divided among the three classes as follows:

The Class I director will be Scott Braunstein, whose term will expire at our 2022 annual meeting of stockholders.

The Class II director will be Andrew Guggenhime, whose term will expire at our 2023 annual meeting of stockholders.

The Class III directors will be Natalie R. Sacks and Rachel E. Haurwitz, whose terms will expire at our 2024 annual meeting of stockholders.

Our amended and restated certificate of incorporation will provide that the authorized number of directors may be changed only by resolution of our board of directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change in control.

See the section of this prospectus captioned “Description of Capital Stock—Anti-takeover Effects of Our Certificate of Incorporation and Our Bylaws” for a discussion of these and other anti-takeover provisions found in our amended and restated certificate of incorporation and amended and restated bylaws, which will become effective immediately prior to the closing of this offering.

Director Independence

Under the rules of the Nasdaq Stock Market, independent directors must comprise a majority of a listed company’s board of directors within one year of the completion of its initial public offering. In addition, the rules

of the Nasdaq Stock Market require that, subject to specified exceptions, each member of a listed company's audit and compensation committees be independent and that director nominees be selected or recommended for the board's selection by independent directors constituting a majority of the independent directors or by a nominating and corporate governance committee comprised solely of independent directors. Under the rules of the Nasdaq Stock Market, a director will only qualify as "independent" if, in the opinion of that company's board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director and that such person is "independent" as defined under Nasdaq Stock Market and the Exchange Act rules.

Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Exchange Act. In order to be considered independent for purposes of Rule 10A-3, a member of an audit committee of a listed company may not, other than in their capacity as a member of the audit committee, the board of directors, or any other board committee: (1) accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or (2) be an affiliated person of the listed company or any of its subsidiaries.

Based upon information requested from and provided by each director concerning their background, employment, and affiliations, including family relationships, our board of directors has determined, with the assistance of counsel, that each of our directors, with the exception of Dr. Haurwitz, is an "independent director" as defined under applicable rules of the Nasdaq Stock Market, and, in the case of Dr. Braunstein, Mr. Guggenhime, Mr. Long-McGie, and Dr. Sacks, the independence criteria set forth in Rule 10A-3 under the Exchange Act. Each of the members of our compensation committee is also a "non-employee director" as defined in Section 16b-3 of the Exchange Act. In determining independence, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances that our board of directors deemed relevant in determining their independence, including the beneficial ownership of our capital stock by each non-employee director. Dr. Haurwitz is not an independent director under these rules because she is our President and Chief Executive Officer.

Board Committees

Our board of directors has established an audit committee, a compensation committee, and a nominating and corporate governance committee, each of which operates pursuant to a charter adopted by our board of directors. The board of directors may also establish other committees from time to time to assist us and the board of directors in their duties. The composition and functioning of each of our board committees complies with all of the applicable requirements of the Sarbanes-Oxley Act, the Nasdaq Stock Market, and the Exchange Act. Each committee charter is available on the Corporate Governance section of our website, *www.cariboubio.com*. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website to be part of this prospectus or in deciding whether to purchase shares of our common stock.

Audit Committee

The audit committee's responsibilities include:

- appointing, approving the compensation of, and evaluating the qualifications, performance, and independence of our independent registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of reports from such firm, and pre-approving all audit and permitted non-audit services to be performed by our independent registered public accounting firm;

- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements;
- reviewing and discussing with management and our independent registered public accounting firm any material issues regarding accounting principles and financial statement presentations;
- coordinating our board of directors' oversight of our internal control over financial reporting, disclosure controls and procedures, our Code of Business Conduct, Scientific and Data Integrity, and Ethics, procedures for complaints, and legal and regulatory matters;
- discussing our risk management policies with management;
- establishing policies regarding hiring employees from our independent registered public accounting firm and procedures for the receipt and retention of accounting-related complaints and concerns;
- meeting independently with our independent registered public accounting firm and management;
- reviewing and approving any related person transactions;
- overseeing our guidelines and policies governing risk assessment and risk management;
- preparing the audit committee report required by SEC rules;
- reviewing and assessing, at least annually, the adequacy of the audit committee's charter; and
- performing, at least annually, an evaluation of the performance of the audit committee.

All audit services and all non-audit services, other than *de minimis* non-audit services, to be provided to us by our independent registered public accounting firm must be approved in advance by our audit committee.

The members of our audit committee are Dr. Braunstein, Mr. Guggenhime, and Dr. Sacks. Mr. Guggenhime chairs the audit committee. Our board of directors has determined that Mr. Guggenhime qualifies as an "audit committee financial expert," as defined under Item 407 of Regulation S-K.

Compensation Committee

Our compensation committee's responsibilities include:

- reviewing our overall compensation strategy, including base salary, incentive compensation, and equity-based grants;
- reviewing and making recommendations to our board of directors for approval of corporate goals and objectives relevant to the compensation of our chief executive officer and our other executive officers;
- recommending to our board of directors the compensation of our chief executive officer and other executive officers;
- reviewing and making recommendations to our board of directors with respect to director compensation;
- overseeing and administering our cash and equity incentive plans;

- reviewing and making recommendations to our board of directors regarding any employment contract and other compensation, severance, and change-in-control arrangements for our executive officers;
- recommending to our board of directors any stock ownership guidelines for our executive officers and non-employee directors;
- retaining, appointing, or obtaining advice of a compensation consultant, legal counsel, or other advisor, and determining the compensation and independence of such consultant or advisor;
- preparing, if required, the compensation committee report on executive compensation for inclusion in our annual proxy statement in accordance with the proxy rules;
- reviewing and assessing, at least annually, the adequacy of the compensation committee's charter; and
- performing, on an annual basis, an evaluation of the performance of the compensation committee.

The members of our compensation committee are Dr. Braunstein, Mr. Guggenhime, and Dr. Sacks. Dr. Braunstein chairs the compensation committee. Prior to establishing a compensation committee, our board of directors made all decisions relating to the compensation of our executive officers.

Nominating and Governance Committee

Our nominating and corporate governance committee's responsibilities include:

- identifying individuals qualified to become members of our board of directors consistent with criteria approved by the board and receiving nominations for such qualified individuals;
- recommending to our board of directors the persons to be nominated for election as directors and to each committee of the board;
- reviewing and recommending committee membership and chairs on an annual basis;
- recommending to our board of directors qualified candidates to fill vacancies on our board of directors;
- developing and recommending to our board of directors appropriate corporate governance policies and procedures and reviewing such policies and procedures, as needed;
- reviewing and making recommendations to our board with respect to our board leadership structure;
- developing a process for the annual evaluation of our board of directors and its committees and overseeing the conduct of this annual evaluation;
- reviewing and assessing, at least annually, the adequacy of the nominating and corporate governance committee's charter; and
- performing, on an annual basis, an evaluation of the performance of the nominating and corporate governance committee.

The members of our nominating and corporate governance committee are Dr. Braunstein, Mr. Guggenhime, and Dr. Sacks. Dr. Sacks chairs the nominating and corporate governance committee.

Leadership Structure of the Board

Our amended and restated bylaws provide our board of directors with flexibility to combine or separate the positions of chair of the board of directors and Chief Executive Officer.

In anticipation of this offering, our board of directors has appointed Mr. Guggenhime to serve as non-executive chair of the board of directors. We believe that separating the role of Chief Executive Officer and chair of the board of directors is appropriate at this time because it provides Dr. Haurwitz with the ability to focus on our day-to-day operations while allowing Mr. Guggenhime to focus on the oversight of our board of directors. We anticipate that our board of directors will periodically review our leadership structure and may make such changes in the future, if any, as it deems appropriate.

Role of the Board of Directors in Risk Oversight Process

Our board of directors has an active role, as a whole and also at the committee level, in overseeing the management of our risks. Our board of directors, as a whole, is responsible for general oversight of risks and regular review of information regarding our risks, including credit risks, liquidity risks, and operational risks. In addition, our audit committee is expected to review and discuss with our management the risks faced by our company and the policies, guidelines, and processes by which management assesses and manages our company's risks, including major financial risk exposures and cybersecurity risk exposures, and the steps our management has taken to monitor and control such exposures.

Code of Business Conduct, Scientific and Data Integrity, and Ethics

We have adopted a written Code of Business Conduct, Scientific and Data Integrity, and Ethics, or Code of Conduct, that applies to our employees, consultants, contractors, and directors. A current copy of the Code of Conduct is available on the Corporate Governance section of our website, *www.cariboubio.com*. The audit committee of our board of directors is responsible for overseeing the Code of Conduct and must approve any waivers of the Code of Conduct for executive officers and directors. We expect that any amendments to the Code of Conduct, or any waivers of its requirements with respect to our executive officers and directors, will be disclosed on our website. Our website and the information contained therein or connected thereto shall not be deemed to be incorporated into this prospectus or the registration statement of which it forms a part. We have included our website address as an inactive textual reference only.

Limitation of Directors' and Officers' Liability and Indemnification

The Delaware General Corporation Law authorizes corporations to limit or eliminate, subject to specified conditions, the personal liability of directors to corporations and their stockholders for monetary damages for breach of their fiduciary duties. Our amended and restated certificate of incorporation, which will be effective upon the completion of this offering, will limit the liability of our directors to the fullest extent permitted by Delaware law.

We have directors' and officers' liability insurance to cover liabilities our directors and executive officers may incur in connection with their services to us. Our amended and restated certificate of incorporation and restated bylaws, which will be effective upon the completion of this offering, will also provide that we will indemnify and advance expenses to any of our directors and executive officers who, by reason of the fact that they are one of our executive officers or directors, is involved in a legal proceeding of any nature. We will repay certain expenses incurred by a director or officer in connection with any civil, criminal, administrative, or investigative action or proceeding, including actions by us or in our name. Such indemnifiable expenses include,

to the maximum extent permitted by law, attorney's fees, judgments, fines, ERISA excise taxes, penalties, settlement amounts, and other expenses reasonably incurred in connection with legal proceedings. A director or officer will not receive indemnification if they are found not to have acted in good faith and in a manner they reasonably believed to be in, or not opposed to, our best interest.

We have entered into or plan to enter into indemnification agreements with each of our directors and executive officers, the form of which is attached as an exhibit to the registration statement of which this prospectus is a part. These agreements provide that we will, among other things, indemnify and advance expenses to our directors and executive officers for certain expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by any such person in any action or proceeding, including any action by us arising out of such person's services as our director or officer, or any other company or enterprise to which the person provides services at our request. We believe that these provisions and agreements are necessary to attract and retain qualified persons as directors and executive officers.

Such limitation of liability and indemnification does not affect the availability of equitable remedies. In addition, we have been advised that in the opinion of the SEC, indemnification for liabilities arising under the Securities Act is against public policy as expressed in the Securities Act and is therefore unenforceable.

There is no pending litigation or proceeding involving any of our directors, executive officers, employees, or agents in which indemnification will be required or permitted. We are not aware of any threatened litigation or proceeding that may result in a claim for such indemnification.

EXECUTIVE AND DIRECTOR COMPENSATION

The following discussion and analysis of compensation arrangements should be read with the compensation tables and related disclosures set forth below. This discussion contains forward-looking statements that are based on our current plans and expectations regarding future compensation programs. Actual compensation programs that we adopt may differ materially from the programs summarized in this discussion.

Introduction

This section provides an overview of the compensation awarded to, earned by, or paid to our principal executive officer and our next two most highly compensated executive officers in respect of their service to us for the fiscal year ended December 31, 2020. We refer to these individuals as our named executive officers. Our named executive officers are:

- Rachel E. Haurwitz, Ph.D., our President and Chief Executive Officer;
- Steven B. Kanner, Ph.D., our Chief Scientific Officer; and
- Barbara G. McClung, J.D., our Chief Legal Officer and Corporate Secretary.

We have also provided an overview of our compensation arrangement with Jason V. O'Byrne, our Chief Financial Officer, who joined our company in February 2021.

Prior to this offering, our board of directors has been responsible for determining the compensation of our executive officers. Our President and Chief Executive Officer made recommendations to our board of directors regarding the compensation of the other executive officers in respect of the fiscal year ended December 31, 2020. In connection with this offering, our board of directors intends to establish a compensation committee, which will be responsible for determining the compensation of our executive officers following this offering. The equity award share numbers and exercise prices presented in this section have been adjusted to reflect the impact of the 1.818-for-1 forward stock split.

Summary Compensation Table

The following table sets forth the compensation awarded to, earned by, or paid to our named executive officers in respect of their service to us for the fiscal years ended December 31, 2020 and December 31, 2019 (as applicable):

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Awards ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)	All Other Compensation ($)	Total ($)
Rachel E. Haurwitz, Ph.D.	2020	450,000	202,500(1)	—	49,384(2)	—	17,720(3)	719,604
President and Chief Executive Officer	2019	425,000	47,813	—	49,256(2)	—	18,356(3)	540,425
Steven B. Kanner, Ph.D.	2020	355,000	124,250(1)	—	140,705(2)	—	21,259(3)	641,215
Chief Scientific Officer	2019	337,500	88,594	—	99,636(2)	—	20,451(3)	546,181
Barbara G. McClung, J.D.	2020	365,000	127,750(1)	—	62,849(2)	—	21,244(3)	576,842
Chief Legal Officer and Corporate Secretary	2019	345,000	90,563	—	29,232(2)	—	20,451(3)	485,246

(1) 2020 bonus paid in February 2021.

(2) The amounts shown represent the grant date fair values of option awards granted in 2020 and 2019 as computed in accordance with Financial Accounting Standards Board (FASB) Accounting Standard Codification (ASC) Topic 718. See Note 12, Stock-based compensation to our consolidated financial statements included elsewhere in this prospectus for a discussion of the assumptions used in the calculation of these amounts.

(3) Health, life, and disability insurance and 401(k) retirement plan contributions for which all regular full-time employees are eligible.

Narrative Disclosure to Summary Compensation Table

Base Salary

During fiscal year 2020, the base salary for each of Dr. Haurwitz, Dr. Kanner, and Ms. McClung was $450,000, $355,000, and $365,000, respectively.

During fiscal year 2019, the base salary for Dr. Haurwitz was $400,000, increased to $450,000 effective July 1, 2019; the base salary for Dr. Kanner was $320,000, increased to $355,000 effective July 1, 2019; and the base salary for Ms. McClung was $325,000, increased to $365,000 effective July 1, 2019.

Annual Bonuses

Each of Dr. Haurwitz, Dr. Kanner, and Ms. McClung was eligible to receive an annual bonus for fiscal years 2020 and 2019, with the target amount of such bonus for each named executive officer set forth in their respective salary increase letters.

For fiscal year 2020, the target bonus amounts, expressed as a percentage of base salary, for each of Dr. Haurwitz, Dr. Kanner, and Ms. McClung were as follows: 45%, 35%, and 35%, respectively. Actual bonuses for fiscal year 2020, paid in February 2021, for each of Dr. Haurwitz, Dr. Kanner, and Ms. McClung were as follows: $202,500, $124,250, and $127,750, respectively.

For fiscal year 2019, the target bonus amounts expressed as a percentage of base salary, for each of Dr. Haurwitz, Dr. Kanner, and Ms. McClung were as follows: 40%, 30%, and 30%, respectively, increased to 45%, 35%, and 35%, respectively, effective July 1, 2019. Actual bonuses for fiscal year 2019, paid in December 2019, for each of Dr. Haurwitz, Dr. Kanner, and Ms. McClung were as follows: $47,813, $88,594, and $90,563, respectively.

Equity Compensation Awards

On March 30, 2021, Dr. Haurwitz, Dr. Kanner, Ms. McClung, and Mr. O'Byrne were awarded stock options under the 2013 Equity Incentive Plan, as amended and restated to date, or the 2013 Plan, covering 437,201, 231,914, 231,914, and 437,201 shares of our common stock, respectively, at an exercise price of $4.11 per share. On June 29, 2021, Mr. O'Byrne was awarded an additional stock option under the 2013 Plan covering 48,966 shares of our common stock at an exercise price of $5.27. For each option granted on March 30, 2021, 1/4th of the shares subject to the option will vest on the one-year anniversary of the March 2, 2021 vesting commencement date in the case of Dr. Haurwitz, Dr. Kanner, and Ms. McClung, and February 8, 2021 in the case of Mr. O'Byrne, and an additional 1/48th of the aggregate number of shares subject to the option will vest on the corresponding day of each month thereafter (or if there is no such corresponding day, on the last day of such month), subject to the employee's continued service to us through the applicable vesting date. Mr. O'Byrne's stock option was a new hire grant pursuant to his offer letter. For Mr. O'Byrne's option granted on June 29, 2021, the vesting commencement date is the date of grant and the vesting schedule from the vesting commencement date is the same as the other options mentioned above.

The Company did not grant any stock option grants to Dr. Haurwitz, Dr. Kanner, or Ms. McClung in fiscal year 2020.

Dr. Haurwitz did not receive any stock option grants in 2019.

Dr. Kanner and Ms. McClung were each awarded a stock option grant covering 146,748 shares of our common stock on October 1, 2019 under the 2013 Plan with an exercise price of $2.68 per share, with 1/4th of the shares subject to the option vesting on the one-year anniversary of the October 1, 2019 vesting commencement date and an additional 1/48th of the aggregate number of shares subject to the option vesting on the corresponding day of each month thereafter (or if there is no such corresponding day, on the last day of such month), subject to the employee's continued service to us thorough the applicable vesting date.

Employment Agreements with Our Named Executive Officers and Mr. O'Byrne

We have entered into written employment agreements with each of our named executive officers and our Chief Financial Officer, which are described below. These agreements will be amended and restated in connection with this offering.

Employment Agreement with Dr. Haurwitz

On June 30, 2017, we entered into an employment agreement with Dr. Haurwitz setting forth the terms and conditions of her employment with us. The employment agreement provides for Dr. Haurwitz to serve as our President and Chief Executive Officer. Under the terms of her employment agreement, Dr. Haurwitz's initial base salary was $325,000, subject to review and adjustment by our board of directors from time to time. Dr. Haurwitz's initial target annual bonus opportunity was 35% of her annual base salary. Effective January 1, 2021, Dr. Haurwitz's annual base salary is $495,000, with a target bonus opportunity of 45% of her annual base salary. We will enter into an amended and restated employment agreement with Dr. Haurwitz, which will become effective upon the closing of this offering, that provides for a base salary of $570,000 and a target bonus opportunity of 55% of her annual base salary.

Employment Agreement with Dr. Kanner

On June 30, 2017, we entered into an employment agreement with Dr. Kanner setting forth the terms and conditions of his employment with us. The employment agreement provides for Dr. Kanner to serve as our Chief Scientific Officer. Under the terms of his employment agreement, Dr. Kanner's initial base salary was $290,000, subject to review and adjustment by our board of directors from time to time. Dr. Kanner's initial target annual bonus opportunity was 30% of his annual base salary. Effective January 1, 2021, Dr. Kanner's annual base salary is $390,000, with a target bonus opportunity of 35% of his annual base salary. We will enter into an amended and restated employment agreement with Dr. Kanner, which will become effective upon the closing of this offering, that provides for a base salary of $440,000 and a target bonus opportunity of 40% of his annual base salary.

Employment Agreement with Ms. McClung

On June 30, 2017, we entered into an employment agreement with Ms. McClung setting forth the terms and conditions of her employment with us. The employment agreement provides for Ms. McClung to serve as our Chief Legal Officer and Corporate Secretary. Under the terms of her employment agreement, Ms. McClung's initial base salary was $260,000, subject to review and adjustment by our board of directors from time to time. Ms. McClung's initial target annual bonus opportunity was 25% of her annual base salary. Effective January 1, 2021, Ms. McClung's annual base salary is $395,000, with a target bonus opportunity of 35% of her annual base salary. We will enter into an amended and restated employment agreement with Ms. McClung, which will become effective upon the closing of this offering, that provides for a base salary of $440,000 and a target bonus opportunity of 40% of her annual base salary.

Employment Agreement with Mr. O'Byrne

On February 8, 2021, we entered into an employment agreement with Mr. O'Byrne setting forth the terms and conditions of his employment with us. The employment agreement provides for Mr. O'Byrne to serve as our Chief Financial Officer commencing February 8, 2021. Under the terms of his employment agreement, Mr. O'Byrne's initial base salary is $385,000, subject to review and adjustment by our board of directors from time to time. Mr. O'Byrne's initial target bonus opportunity is 35% of his annual base salary. We will enter into an amended and restated employment agreement with Mr. O'Byrne, which will become effective upon the closing of this offering, that provides for a base salary of $415,000 and a target bonus opportunity of 40% of his annual base salary.

On March 15, 2021, we paid Mr. O'Byrne a one-time bonus of $70,000. Pursuant to Mr. O'Byrne's offer letter, this bonus was contingent on both our closing of our Series C preferred stock financing, which closed

in March 2021, and Mr. O'Byrne not receiving a bonus for 2020 from his previous employer. If, within one year from the date of the bonus payment, Mr. O'Byrne chooses to leave the Company or his employment is terminated by us for cause, then Mr. O'Byrne must repay us a prorated portion of such bonus.

Equity Incentive Plans

2013 Equity Incentive Plan

The 2013 Plan was duly adopted by our board of directors and approved by our stockholders in November 2013. The 2013 Plan was subsequently amended to increase the number of shares issuable under the plan. The 2013 Plan provides for the grant of incentive stock options, or ISOs, nonqualified stock options, or NSOs, stock appreciation rights, or SARs, restricted stock, and restricted stock units to officers, directors, employees, and consultants of the Company.

The 2013 Plan authorizes the issuance of up to 9,954,446 shares of our common stock pursuant to awards, plus up to 454,500 shares subject to stock options or other awards granted under our terminated 2012 Stock Option/Stock Issuance Plan (described below) that expire or otherwise terminate without having been exercised in full and shares of our common stock issued pursuant to awards granted under the 2012 Plan that are forfeited to or repurchased by us. As of July 12, 2021, there were outstanding stock options covering 5,080,046 shares granted under the 2013 Plan and there were 930,836 shares of our common stock remaining available for grant or issuance under the 2013 Plan.

Plan administration. Our board of directors, or a committee appointed by our board of directors, has the authority to administer the 2013 Plan and grant awards under the plan. This authority includes the authority to select the service providers to whom awards will be granted under the 2013 Plan, the number of shares to be subject to those awards, and the terms and conditions of those awards. In addition, the administrator has the authority to construe and interpret the 2013 Plan and to adopt rules for the administration, interpretation, and application of the 2013 Plan that are consistent with the terms of the 2013 Plan.

Non-transferability of awards. Shares issued pursuant to an award of restricted stock under the 2013 Plan may not be sold, transferred, pledged, assigned, or otherwise alienated or hypothecated until the end of the period during which the transfer of such shares are subject to restrictions and are subject to a substantial risk of forfeiture. Such restrictions may be based on the passage of time, the achievement of target levels of performance, or the occurrence of other events as determined by our board of directors, or a committee thereof appointed by our board of directors.

Amendment and termination. Our board of directors may amend or terminate the 2013 Plan at any time, but no amendment may impair the rights of a holder of an outstanding award without the holder's consent. Any amendment of the 2013 Plan will be subject to the approval of our stockholders where such approval is required by applicable law.

2012 Stock Option/Stock Issuance Plan

The 2012 Stock Option/Stock Issuance Plan, or the 2012 Plan, was duly adopted by our board of directors and approved by our stockholders in October 2012. The 2012 Plan authorizes the issuance of 1,181,700 shares of our common stock pursuant to awards. As of July 12, 2021, there were no outstanding stock options granted under the 2012 Plan. Effective upon the adoption of the 2013 Plan, no further awards may be issued under the 2012 Plan.

Plan administration. Our board of directors, or a committee appointed by our board of directors, has the authority to administer the 2012 Plan. This authority includes the authority to adopt rules for the administration, interpretation, and application of the 2012 Plan that are consistent with the terms of the 2012 Plan.

Transferability of awards. An ISO granted under the 2012 Plan is not assignable or transferable other than by will or by the laws of inheritance following the optionee's death. An NSO is subject to the same transfer restrictions as an ISO, except that an NSO, together with the underlying unexercised shares of common stock, may, to the extent permitted by the 2012 Plan administrator, be assigned in whole or in part during the optionee's lifetime by gift.

2021 Equity Incentive Plan

Our board of directors has adopted and our stockholders have approved our 2021 Equity Incentive Plan, or the 2021 Plan. The 2021 Plan is a successor to our 2013 Plan. The 2021 Plan became effective upon the date of the underwriting agreement between the Company and the underwriters managing the initial public offering of the common stock, pursuant to which the common stock is priced for the initial public offering (the "IPO Date"). The principal purpose of the 2021 Plan is to attract, retain, and motivate selected employees, consultants, and directors through the granting of stock-based compensation awards. The material terms of the 2021 Plan, as it is currently contemplated by our board of directors, are summarized below. No further grants will be made under the 2013 Plan following the effectiveness of the 2021 Plan.

Share Reserve. Initially, under the 2021 Plan the maximum number of shares of our common stock that may be issued will not exceed 11,232,084 shares which is the sum of (i) 5,200,000 new shares, plus (ii) an additional number of shares not to exceed 6,032,084, consisting of (A) shares that remain available for issuance of awards under our 2013 Plan as of immediately prior to the time our 2021 Plan becomes effective and (B) shares of our common stock subject to outstanding stock options or other awards granted under our 2013 Plan that, on or after the 2021 Plan becomes effective, terminate or expire prior to exercise or settlement; are not issued; are forfeited; or are reacquired or withheld (or not issued) to satisfy a tax withholding obligation or the purchase or exercise price, if any, as such shares become available from time to time. The shares will be initially reserved for issuance pursuant to a variety of stock-based compensation awards, including stock options, stock appreciation rights, or SARs, restricted stock awards, restricted stock unit awards, performance stock awards, performance stock unit awards, and other stock-based awards. The number of shares initially reserved for issuance or transfer pursuant to awards under the 2021 Plan will be increased by, if approved by our board of directors or the compensation committee of our board of directors, an annual increase on the first day of each fiscal year beginning in 2022 and ending in 2031, equal to the lesser of (A) 5% of the shares of stock outstanding on the last day of the immediately preceding fiscal year, and (B) such smaller number of shares of stock as determined by our board of directors; provided, however, that no more than 56,000,000 shares of stock may be issued upon the exercise of incentive stock options.

The following counting provisions apply to the share reserve under the 2021 Plan:

- to the extent that an award terminates, expires or lapses for any reason or an award is settled in cash without the delivery of shares, any shares subject to the award at such time will be available for future grants under the 2021 Plan;
- to the extent shares are tendered or withheld to satisfy the grant, exercise price or tax withholding obligation with respect to any award under the 2021 Plan, such tendered or withheld shares will be available for future grants under the 2021 Plan;
- to the extent that shares of our common stock awarded by us are repurchased by us prior to vesting so that shares are returned to us, such shares will be available for future grants under the 2021 Plan;
- the payment of dividend equivalents in cash in conjunction with any outstanding awards will not be counted against the shares available for issuance under the 2021 Plan; and

- to the extent permitted by applicable law or any exchange rule, shares issued in assumption of, or in substitution for, any outstanding awards of any entity acquired in any form of combination by us or any of our subsidiaries will not be counted against the shares available for issuance under the 2021 Plan.

The 2021 Plan will include limits with respect to non-employee directors. A non-employee director shall not receive total compensation for any fiscal year of the Company that exceeds $750,000, or $1,000,000 in the year of the director's initial appointment to the Board. For this purpose total compensation is the sum of the grant date fair value of any equity or equity-based awards granted to such non-employee director during such fiscal year, and the amount of cash fees or awards payable to such non-employee director in respect of such service during any fiscal year, including any such amounts that are voluntarily deferred by the non-employee director.

Administration. The compensation committee of our board of directors is expected to administer the 2021 Plan unless our board of directors assumes authority for administration. The compensation committee must consist of at least three members of our board of directors, each of whom is intended to qualify as a "non-employee director" for purposes of Rule 16b-3 under the Exchange Act and an "independent director" within the meaning of the rules of the Nasdaq Global Select Market, or other principal securities market on which shares of our common stock are traded. The 2021 Plan provides that the board of directors or the compensation committee may delegate its authority to grant awards to employees other than executive officers and certain senior executives of our company to a committee consisting of one or more members of our board of directors or one or more of our officers, other than awards made to our non-employee directors, which must be approved by our full board of directors.

Subject to the terms and conditions of the 2021 Plan, the administrator has the authority to select the persons to whom awards are to be made, to determine the number of shares to be subject to awards, and the terms and conditions of awards, and to make all other determinations and to take all other actions necessary or advisable for the administration of the 2021 Plan. The administrator is also authorized to adopt, amend, or rescind rules relating to administration of the 2021 Plan. Our board of directors may at any time remove the compensation committee as the administrator and revest in itself the authority to administer the 2021 Plan. The full board of directors will administer the 2021 Plan with respect to awards to non-employee directors.

Eligibility. Options, SARs, restricted stock, performance stock, and all other stock-based awards under the 2021 Plan may be granted to individuals who are then our officers, employees, or consultants or are the officers, employees, or consultants of certain of our subsidiaries. Such awards also may be granted to our directors. Only employees of our company or certain of our subsidiaries may be granted incentive stock options, or ISOs.

Awards. The 2021 Plan provides that the administrator may grant or issue stock options, SARs, restricted stock, restricted stock units, performance stock, performance stock units, other stock-based awards, and dividend equivalents, or any combination thereof. Each award will be set forth in a separate agreement with the person receiving the award and will indicate the type, terms, and conditions of the award.

- *Nonstatutory Stock Options*, or NSOs, will provide for the right to purchase shares of our common stock at a specified price which may not be less than fair market value on the date of grant, and usually will become exercisable (at the discretion of the administrator) in one or more installments after the grant date, subject to the participant's continued employment or service with us and/or subject to the satisfaction of corporate performance targets and individual performance targets established by the administrator. NSOs may be granted for any term specified by the administrator that does not exceed ten years.

- *Incentive Stock Options*, or ISOs, will be designed in a manner intended to comply with the provisions of Section 422 of the Tax Code and will be subject to specified restrictions contained in the Tax Code. Among such restrictions, ISOs must have an exercise price of not less than the fair market value of a share of common stock on the date of grant, may only be granted to employees,

and must not be exercisable after a period of ten years measured from the date of grant. In the case of an ISO granted to an individual who owns (or is deemed to own) at least 10% of the total combined voting power of all classes of our capital stock, the 2021 Plan provides that the exercise price must be at least 110% of the fair market value of a share of common stock on the date of grant and the ISO must not be exercisable after a period of five years measured from the date of grant.

- *Restricted Stock and Performance Stock* may be granted to any eligible individual and made subject to such restrictions as may be determined by the administrator, which in the case of performance stock will include performance-based restrictions. Restricted stock and performance stock, typically, may be forfeited for no consideration or repurchased by us at the original purchase price if the conditions or restrictions on vesting are not met. In general, such stock may not be sold or otherwise transferred until restrictions are removed or expire. Recipients of restricted stock and performance stock, unlike recipients of options, will have voting rights and will have the right to receive dividends, if any, prior to the time when the restrictions lapse, however, extraordinary dividends will generally be placed in escrow, and will not be released until restrictions are removed or expire.

- *Restricted Stock Units and Performance Stock Units* may be awarded to any eligible individual, typically without payment of consideration, but subject to vesting conditions based on continued employment or service or on performance criteria established by the administrator. Like restricted stock and performance stock, such units may not be sold, or otherwise transferred or hypothecated, until vesting conditions are removed or expire. Unlike restricted stock and performance stock, stock underlying such units will not be issued until the units have vested, and recipients of units generally will have no voting or dividend rights prior to the time when vesting conditions are satisfied.

- *Stock Appreciation Rights*, or SARs, may be granted in connection with stock options or other awards, or separately. SARs granted in connection with stock options or other awards typically will provide for payments to the holder based upon increases in the price of our common stock over a set exercise price. The exercise price of any SAR granted under the 2021 Plan must be at least 100% of the fair market value of a share of our common stock on the date of grant. There are no restrictions specified in the 2021 Plan on the exercise of SARs or the amount of gain realizable therefrom, although restrictions may be imposed by the administrator in the SAR agreements. SARs under the 2021 Plan will be settled in cash or shares of our common stock, or in a combination of both, at the election of the administrator.

- *Other Stock-Based Awards* are awards of fully vested shares of our common stock and other awards valued wholly or partially by referring to, or otherwise based on, shares of our common stock. Other stock-based awards may be granted to participants and may also be available as a payment form in the settlement of other awards, as standalone payments, and as payment in lieu of base salary, bonus, fees, or other cash compensation otherwise payable to any individual who is eligible to receive awards. The plan administrator will determine the terms and conditions of other stock-based awards, which may include vesting conditions based on continued service, performance, and/or other conditions.

- *Dividend Equivalents* represent the right to receive the equivalent value of dividends paid on shares of our common stock and may be granted alone or in tandem with awards other than stock options or SARs. Dividend equivalents are credited as of dividend payments dates during the period between a specified date and the date such award terminates or expires, as determined by the plan administrator.

Any award may be granted as a performance award, meaning that the award will be subject to vesting and/or payment based on the attainment of specified performance goals.

Change in Control. In the event of a change in control where the acquirer does not assume or replace awards granted prior to the consummation of such transaction, awards issued under the 2021 Plan may be subject to accelerated vesting in the discretion of the administrator, such that 100% of such awards will become vested and exercisable or payable, as applicable. In addition, the administrator will also have complete discretion to structure one or more awards under the 2021 Plan to provide that such awards will become vested and exercisable or payable on an accelerated basis in the event such awards are assumed or replaced with equivalent awards, including in such circumstances where the individual's service with us or the acquiring entity is subsequently terminated within a designated period following the change in control event. The administrator may also make appropriate adjustments to awards under the 2021 Plan and is authorized to provide for the acceleration, cash-out, termination, assumption, substitution, or conversion of such awards in the event of a change in control or certain other unusual or nonrecurring events or transactions. Under the 2021 Plan, a change in control is generally defined as:

- the transfer or exchange in a single transaction or series of related transactions by our stockholders of more than 50% of our voting stock to a person or group;
- a change in the composition of our board of directors such that incumbent directors cease to constitute a majority of the board;
- the consummation of a merger, consolidation reorganization or business combination, a sale or disposition of all or substantially all of the Company's assets or the acquisition of assets or stock of another entity, other than a transaction (i) that results in our outstanding voting securities immediately before the transaction continuing to represent a majority of the voting power of the acquiring company's outstanding voting securities; (ii) after which no person or group beneficially owns 50% or more of the outstanding voting securities of the surviving entity immediately after the transaction; and (iii) after which at least a majority of the board of the successor entities were board members at the time of the approval of the transaction; or
- our liquidation or dissolution.

Adjustments of Awards. In the event of any stock dividend or other distribution, stock split, reverse stock split, reorganization, combination, or exchange of shares, merger, consolidation, split-up, spin-off, recapitalization, repurchase, or any other corporate event affecting the number of outstanding shares of our common stock or the share price of our common stock that would require adjustments to the 2021 Plan or any awards under the 2021 Plan in order to prevent the dilution or enlargement of the potential benefits intended to be made available thereunder, the administrator will make appropriate, proportionate adjustments to:

- the aggregate number and type of shares subject to the 2021 Plan (including the number of shares that may be issued as incentive stock options);
- the number and kind of shares subject to outstanding awards and terms and conditions of outstanding awards (including, without limitation, any applicable performance targets or criteria with respect to such awards); and
- the grant or exercise price per share of any outstanding awards under the 2021 Plan.

Amendment and Termination. The administrator may terminate, amend, or modify the 2021 Plan at any time and from time to time. However, we must generally obtain stockholder approval to the extent required by applicable law, rule, or regulation (including any applicable stock exchange rule). Notwithstanding the foregoing, an option may be amended to reduce the per share exercise price below the per share exercise price of such option on the grant date and options may be granted in exchange for, or in connection with, the cancellation or surrender of options having a higher per share exercise price without receiving additional stockholder approval.

Termination. The board of directors may terminate the 2021 Plan at any time. No awards, including incentive stock options, may be granted pursuant to the 2021 Plan after the 10th anniversary of the effective date of the 2021 Plan, and no additional annual share increases to the 2021 Plan's aggregate share limit will occur from and after such anniversary. Any award that is outstanding on the termination date of the 2021 Plan will remain in force according to the terms of the 2021 Plan and the applicable award agreement.

We intend to file with the SEC a registration statement on Form S-8 covering the shares of our common stock issuable under the 2021 Plan.

2021 Employee Stock Purchase Plan

Our board of directors has adopted, and our stockholders have approved our 2021 Employee Stock Purchase Plan, or the 2021 ESPP. The 2021 ESPP became effective immediately prior to and contingent upon the IPO Date. The principal purpose of the 2021 ESPP is to secure the services of new employees, to retain the services of existing employees, and to provide incentives for such individuals to exert maximum efforts toward our success. The 2021 ESPP includes two components. One component is intended to qualify for favorable tax treatment under Section 423 of the Tax Code. The second component allows for the grant of purchase rights that does not qualify for favorable tax treatment due to deviations in an offering and to permit participation by eligible employees who are employed outside of the United States in compliance with the laws of other jurisdictions.

Shares available. We have initially reserved 511,000 shares of our common stock for sale under the 2021 ESPP. The aggregate number of shares reserved for sale under our 2021 ESPP will increase automatically on January 1 of each of the first 10 calendar years after the first offering date by the number of shares equal to the lesser of 1% of the total outstanding shares of our common stock as of the immediately preceding December 31 (rounded to the nearest whole share) or a number of shares as may be determined by our board of directors in any particular year. The aggregate number of shares issued over the term of the 2021 ESPP, subject to stock-splits, recapitalizations, or similar events, may not exceed 10,000,000 shares of our common stock.

Administration. The 2021 ESPP will be administered by the compensation committee of our board of directors, or by our board of directors acting in place of our compensation committee, subject to the terms and conditions of the 2021 ESPP. Among other things, the compensation committee will have the authority to determine eligibility for participation in the 2021 ESPP, designate separate offerings under the plan, and construe, interpret, and apply the terms of the plan.

Eligibility. Employees eligible to participate in any offering pursuant to the 2021 ESPP generally include any employee who is employed by us or certain of our designated subsidiaries at the beginning of the offering period. However, our compensation committee may determine that employees who are customarily employed for 20 hours or less per week or for five months or less in a calendar year, certain "highly compensated" employees, or employees resident in a foreign jurisdiction whose participation is either prohibited under local law, or where compliance with local law would violate Section 423 of the Tax Code, may not be eligible to participate in the 2021 ESPP. In addition, any employee who owns (or is deemed to own as a result of attribution) 5% or more of the total combined voting power or value of all classes of our capital stock, or the capital stock of one of our qualifying subsidiaries, or who will own such amount as a result of participation in the 2021 ESPP, will not be eligible to participate in the 2021 ESPP. The compensation committee of our board of directors may impose additional restrictions on eligibility from time to time.

Offerings. Under the 2021 ESPP, eligible employees will be offered the option to purchase shares of our common stock at a discount over a series of offering periods. Each offering period may itself consist of one or more purchase periods with purchase dates, and on the purchase dates shares of our common stock will be purchased for employees participating in the offering. No offering period may be longer than 27 months. An offering under the 2021 ESPP may be terminated under certain circumstances.

Participation. Participating employees will be able to purchase the offered shares of our common stock by accumulating funds through payroll deductions or through cash payments. Participants may select a rate of payroll deduction between 1% and 15% of their eligible compensation, as defined in the 2021 ESPP. However, a participant may not subscribe for more than $25,000 in fair market value of shares of our common stock (determined as of the date the offering period commences) in any calendar year in which the offering is in effect.

Unless otherwise determined by the compensation committee of our board of directors, the purchase price for shares of our common stock purchased under the 2021 ESPP will be 85% of the lesser of the fair market value of our common stock on (i) the first trading day of the applicable offering period or (ii) the last trading day of each purchase period in the applicable offering period.

Once an employee becomes a participant in an offering period, the participant will be automatically enrolled in each subsequent offering period at the same contribution level. A participant may reduce their contribution in accordance with procedures set forth by the compensation committee and may withdraw from participation in the 2021 ESPP at any time prior the end of an offering period, subject to time restrictions specified in the plan or such other time as may be specified by the compensation committee. Upon withdrawal, the accumulated payroll deductions will be returned to the participant without interest.

Adjustments upon Recapitalization. If the number of outstanding shares of our common stock is changed by stock dividend, recapitalization, stock split, reverse stock split, subdivision, combination, reclassification, or similar change in our capital structure without consideration, then our compensation committee will proportionately adjust the number and class of common stock that is available under the 2021 ESPP, the purchase price and number of shares any participant has elected to purchase, as well as the maximum number of shares that may be purchased by participants. The 2021 ESPP also includes provisions for adjustment in the event a change in corporate structure or similar transaction occurs.

Change of Control. If we experience a corporate transaction, the compensation committee of our board of directors may elect to shorten a purchase period in anticipation of the transaction, in which case the participants' accumulated contributions would be used to purchase shares prior to the consummation of the corporate transactions with the resulting termination of the purchase rights, and/or suspend the plan. Alternatively, it may require outstanding rights to purchase shares to be assumed or an equivalent option substituted by the successor corporation.

Transferability. Participants may not assign, transfer, pledge, or otherwise dispose of payroll deductions or cash payments credited to their account, or any rights with regard to an election to purchase shares pursuant to the 2021 ESPP other than by will or the laws of descent or distribution.

Amendment; Termination. The compensation committee of our board of directors may amend, suspend, or terminate the 2021 ESPP at any time without stockholder consent, except as required by law. The 2021 ESPP will continue until the earlier to occur of (a) termination of the 2021 ESPP by our board of directors, (b) issuance of all of the shares reserved for issuance under the 2021 ESPP, or (c) the 10th anniversary of the first purchase date under the 2021 ESPP.

Outstanding Awards at Fiscal Year-End Table

The following table sets forth information concerning outstanding equity awards held by each of our named executive officers as of December 31, 2020:

	Option awards				
Name	Vesting commencement date(1)	Number of securities underlying unexercised options exercisable (#)	Number of securities underlying unexercised options unexercisable (#)	Option exercise price ($/share)	Option expiration date
Rachel E. Haurwitz, Ph.D.	6/12/2018	85,218	51,131	2.95	6/11/2023
Steven B. Kanner, Ph.D.	6/30/2017	177,327	33,945	1.81	7/11/2027
	6/30/2017	4,879	698	1.81	3/7/2028
	10/1/2019	42,801	103,947	2.68	9/30/2029
Barbara G. McClung, J.D.	4/29/2015	235,331	—	0.40	7/17/2025
	7/12/2016	41,234	—	1.62	7/11/2026
	6/12/2018	356	216	2.68	6/11/2028
	10/1/2019	42,801	103,947	2.68	9/30/2029

(1) 1/4th of the shares subject to the option vest on the one-year anniversary of the vesting commencement date and an additional 1/48th of the aggregate number of shares subject to the option vest on the corresponding day of each month thereafter (or if there is no such corresponding day, on the last day of such month), subject to continued service to us thorough the applicable vesting date.

Severance and Change of Control Payments and Benefits

Employment Agreement with our Named Executive Officers and Mr. O'Byrne

Our amended and restated employment agreements with each of our named executive officers and Mr. O'Byrne, which will become effective upon the closing of this offering, provide that in the event the executive terminates their employment for "good reason" or we terminate their employment without "cause" (in each case defined in their employment agreement), they are entitled to receive the following benefits, in addition to any accrued obligations and subject to their execution of a separation agreement containing a general release of claims in our favor and obligations regarding confidentiality, return of property, and non-disparagement: (i) any base salary earned through the date of termination; (ii) unpaid expense reimbursement in accordance with our policy; (iii) unused vacation that accrued through the date of termination on or before the time required by law but in no event more than thirty days after the date of termination; (iv) any vested benefits under any of our employee benefit plans through the date of termination; (v) nine months of base salary (12 months in the case of Dr. Haurwitz); (vi) continuation of healthcare insurance coverage for nine months (12 months in the case of Dr. Haurwitz) or the COBRA health continuation period, whichever ends earlier; and (vii) 100% of their unvested stock options and restricted stock outstanding as of the effective date of the amended and restated employment agreements, if any, will become immediately vested and immediately prior to the expiration of the three month post-termination exercise period for the stock options, such period will be extended so they will have 12 months from the date of termination in which to exercise their stock options (regardless of any language to the contrary in any stock plan then in effect, but subject to the expiration date of the stock options). The amounts payable under items (v) and (vi) will be paid out in substantially equal installments in accordance with our payroll practice over nine months (12 months in the case of Dr. Haurwitz) commencing on the first regularly scheduled payroll date that is at least 30 days after the date of termination, provided that the separation agreement becomes fully effective.

In the event that the executive's employment is terminated by us without "cause" or the executive terminates their employment for "good reason" within 12 months after a change in control, or within three

months prior to a change in the ownership or effective control of the Company, or in the ownership of a substantial portion of the Company's assets under Section 409A of the Tax Code, which we refer to as a 409A Change in Control, subject to their execution of a separation agreement containing a general release of claims in our favor and obligations regarding confidentiality, return of property, and non-disparagement, they will be entitled to the benefits set forth above, provided that the number of months of base salary and benefits continuation shall be increased to 12 months (18 months in the case of Dr. Haurwitz) and the executives shall be entitled to 1.0 times their target annual bonus (1.5 times in the case of Dr. Haurwitz). The target bonus amount is paid on the first regularly scheduled payroll date that is at least 30 days after the date of termination (or date of the 409A Change in Control, for an executive who is terminated prior to the change in control), and if the change in control is a 409A Change in Control, the severance amounts will be payable as a lump sum on the first regularly scheduled payroll date that is at least 30 days following the termination date (or date of the 409A Change in Control for an executive who is terminated prior to the change in control), subject to the separation agreement having become fully effective (for clarity, the COBRA payments set forth above will be paid in accordance with the timing set forth above).

Each executive's amended and restated employment agreement defines "cause" to mean the occurrence of any one or more of the following, subject to certain notice and cure rights: (i) conduct constituting a material act of misconduct in connection with the performance of their duties, including, without limitation, misappropriation of funds or property of our company; (ii) the commission of any felony or a misdemeanor involving moral turpitude, deceit, dishonesty or fraud, or any conduct that would reasonably be expected to result in material injury or reputational harm to our company if they were retained in their position; (iii) continued non-performance of duties, other than by reason of physical or mental illness, incapacity or disability, that has continued for more than thirty days following written notice of such non-performance from the board of directors; (iv) a material violation of our written policies; or (v) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by us to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation.

Each executive's amended and restated employment agreement defines "good reason" to mean the occurrence of any one or more of the following, subject to certain notice and cure rights: (i) a material diminution in their responsibilities, authority or duties; (ii) the assignment of duties that are materially inconsistent with their position; (iii) a decrease of more than 10% of their base salary except for across-the-board reductions based on our financial performance similarly affecting all of our executive officers; (iv) a change in the Company's location at which they perform their duties to a location more than 50 miles driving distance from the original location; and (v) a material breach of the employment agreement by us.

Each executive's amended and restated employment agreement defines "change in control" as any of the following: (i) any "person," as such term is used in Sections 13(d) and 14(d) of the Exchange Act, other than us, any of our subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of our company or any of our subsidiaries, together with all "affiliates" and "associates," as such terms are defined in Rule 12b-2 under the Exchange Act, of such person, becomes the "beneficial owner," as such term is defined in Rule 13d-3 under the Exchange Act, directly or indirectly, of securities of our company representing 50% or more of the combined voting power of our then outstanding voting securities, in such case other than as a result of an acquisition of securities directly from the Company; or (ii) the date a majority of our board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of our board before the date of the appointment or election; or (iii) the consummation of (A) a consolidation or merger of our company where our stockholders, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own, as such term is defined in Rule 13d-3 under the Exchange Act, directly or indirectly, shares representing in the aggregate more than 50% of the voting shares of our company issuing cash or securities in the consolidation or merger, or of its ultimate parent corporation, if any, or (B) any sale or other transfer, in one transaction or a series

of transactions contemplated or arranged by any party as a single plan, of all or substantially all of the assets of the Company. Certain of the foregoing events that result solely from an acquisition of securities by the Company are not considered a "change in control."

2013 Equity Incentive Plan

Under the terms of the 2013 Plan, in the event of a merger, consolidation, or other capital reorganization or business combination transaction with or into another corporation, entity or person, or a change in control, each outstanding award will be treated as our board of directors, or a committee thereof appointed by our board of directors, determines, including, without limitation, that (i) awards will be assumed, or substantially equivalent awards will be substituted, by the acquiring or succeeding corporation, or an affiliate thereof, with appropriate adjustments as to the number and kind of shares and prices; (ii) the awards will terminate upon or immediately prior to the consummation of such merger or change in control for no consideration; (iii) outstanding awards will vest and become exercisable, realizable, or payable, or restrictions applicable to an award will lapse, in whole or in part prior to or upon consummation of such merger or change in control, and, to the extent our board of directors, or a committee thereof appointed by our board of directors, determines, terminate upon or immediately prior to the effectiveness of such merger or change in control; (iv) the termination of an award or forfeiture of shares that are unvested at the time of the transaction in exchange for an amount of cash and/or property, if any, equal to the excess of the fair market value or the exercise price or purchase price paid or to be paid for the shares subject to the awards; (v) the continuation of such outstanding awards if we are the surviving corporation; or (vi) any combination of the foregoing.

2012 Stock Option/Stock Issuance Plan

Under the terms of the 2012 Plan, in the event of a merger, consolidation, other reorganization or sale of all or substantially all of our assets, the shares subject to each option outstanding under the 2012 Plan will automatically vest in full so that each such option will, immediately prior to the effective date of the change in control, become exercisable for all of the shares of common stock at the time subject to that option and may be exercised for any or all of those shares as fully-vested shares of common stock. However, the shares subject to an outstanding option will not vest on such an accelerated basis if and to the extent: (i) such option is assumed by the successor corporation, or parent thereof, or otherwise continued in full force and effect pursuant to the terms of the change in control transaction and any our repurchase rights with respect to any unvested shares purchasable under the option are concurrently assigned to such successor corporation, or parent thereof; (ii) such option is to be replaced with a cash retention program or any successor corporation which preserves the spread existing on the unvested option shares at the time of the change of control and provides for subsequent payout of that spread in accordance with the same vesting schedule applicable to those unvested option shares; or (iii) the acceleration of such option is subject to other limitations imposed by the our board of directors, or a committee thereof appointed by our board of directors, at the time of the option grant.

Other Elements of Compensation

Retirement Plan

We maintain a defined contribution employee retirement plan, or 401(k) Plan, for our executive officers and employees. Our 401(k) Plan is intended to qualify as a tax-qualified plan under Section 401(a) of the Tax Code. Our 401(k) Plan provides that each participant may contribute up to the lesser of 100% of their compensation or the statutory limit, which was $19,500 for calendar year 2020. Participants who are 50 years or older can also make "catch-up" contributions, which in calendar year 2020 were up to an additional $6,500 above the statutory limit. We currently make matching contributions into the 401(k) Plan on behalf of our participants. We match 100% of eligible contributions up to the first 4% of compensation. Participant contributions are held and invested, pursuant to the participant's instructions, by the Plan's trustee.

Employee Benefits and Perquisites

All of our executive officers and employees are eligible to participate in our employee benefit plans, including our medical, dental, vision, disability and life insurance plans.

No Tax Gross-Ups

We do not make gross-up payments to cover our executive executive officers' personal income taxes that may pertain to any of the compensation or perquisites paid or provided by us.

Non-Employee Director Compensation

The following table sets forth information concerning the compensation awarded to, earned by or paid to our non-employee directors during the fiscal year ended December 31, 2020. Dr. Haurwitz does not receive compensation for her service as a director. Dr. Haurwitz's compensation for 2020 is included with that of our other named executive officers in the Summary Compensation Table (2020 and 2019) above.

Name	Fees Earned or Paid in Cash ($)	Option Awards(2) ($)	Total ($)
Philip Austin(1)	—	—	—
Natalie R. Sacks(2)	$30,000	$30,866	$60,866
Robert Weisskoff(3)	—	—	—

(1) Mr. Austin resigned from our board of directors, effective March 2, 2021.

(2) As of December 31, 2020, Dr. Sacks held stock options to purchase an aggregate of 72,720 shares of our common stock, of which 45,450 shares have vested, and 1,514 shares will vest each month through June 2022.

(3) Dr. Weisskoff resigned from our board of directors, effective March 30, 2021.

Director Compensation

In respect of their service on our board of directors in fiscal year 2020, our non-employee directors who were not affiliated with a stockholder were each entitled to receive $30,000 per year, paid in quarterly installments of $7,500. Dr. Sacks was the only director who received that compensation in 2020 and she will receive non-employee director compensation in 2021.

Director Compensation Policy

In connection with this offering, our board of directors will adopt a non-employee director compensation policy, which will become effective upon the completion of this offering. Under the non-employee director compensation policy, our non-employee directors, will be compensated as follows following this offering:

- each non-employee director will receive an annual cash fee of $40,000;
- any non-executive chair of the board of directors will receive an additional annual cash fee of $35,000;
- each non-employee director who is a member of the audit committee will receive an additional annual cash fee of $7,500 ($15,000 for the audit committee chair);

- each non-employee director who is a member of the compensation committee will receive an additional annual cash fee of $5,000 ($10,000 for the compensation committee chair); and

- each non-employee director who is a member of the nominating and corporate governance committee will receive an additional annual cash fee of $4,000 ($8,000 for the nominating and corporate governance committee chair).

All cash fees will be paid quarterly, in arrears, or upon the earlier resignation or removal of the non-employee director. The amount of each payment will be prorated for any portion of a calendar quarter that a non-employee director is not serving on our board of directors, based on the number of calendar days served by such non-employee director.

Each non-employee director is entitled to reimbursement for reasonable travel and other expenses incurred in connection with attending meetings of our board of directors and any committee on which they serve.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following includes a summary of transactions we have entered into since January 1, 2018, and any currently proposed transactions, to which we were or are expected to be a participant in which (i) the amount involved exceeded or will exceed $120,000 and (ii) any of our executive officers, directors, or holders of more than 5% of any class of our voting securities, or any affiliate or member of the immediate family of any of the foregoing persons, had or will have a direct or indirect material interest, other than the compensation and other arrangements we describe under "Executive and Director Compensation."

Loan to Dr. Haurwitz

On November 27, 2018, we entered into a promissory note made by Dr. Haurwitz in favor of us in the principal amount of $1,100,000 with interest at a rate of 3.04% compounded annually, on the unpaid balance of such principal sum. The entire unpaid principal balance of the promissory note, together with the accrued and unpaid interest, becomes due and payable on November 27, 2023. Prepayment of the principal balance of the promissory note, together with accrued and unpaid interest, may be made in whole or in part at any time without penalty. In order to secure the payment of the promissory note, we entered into a Pledge and Security Agreement with Dr. Haurwitz where she pledged and granted us a security interest in 409,795 shares of our common stock held by her. On June 7, 2021, Dr. Haurwitz repaid the loan in full to us, including approximately $86,573 of accrued interest. Dr. Haurwitz is one of our co-founders, our President and Chief Executive Officer, a director, and a holder of greater than 5% of our common stock.

Transactions with Dr. Doudna

Dr. Doudna holds greater than 5% of our common stock, is one of our co-founders, and is a member of our Scientific Advisory Board, or SAB. We paid Dr. Doudna $156,250 in fiscal year 2018 for her services on our SAB and a second scientific advisory board related to a proposed new investment that did not materialize. We paid Dr. Doudna $125,000 in fiscal year 2019 for her service on our SAB. In fiscal year 2020, we and Dr. Doudna agreed to a SAB compensation of $25,000 for her service on our SAB. Dr. Doudna currently receives an annual payment of $125,000 for serving as a member of our SAB.

Licensing Agreement Transaction

On May 15, 2020, we entered into an exclusive license agreement in a defined field under certain intellectual property rights and know-how to a private company controlled by Anterra F&A Ventures I Coöperatief U.A., or Anterra. At the time the license was granted, Anterra was a holder of approximately 6.5% of our common stock, assuming conversion of all of its preferred stock into common stock, and one of Anterra's principals, Philip Austin, was a member of our board of directors. Mr. Austin resigned from our board of directors in March 2021. In exchange for the license, we received shares of preferred stock in the private company with a transaction value of approximately $7.5 million, which represented a material equity ownership position in the private company at that time and the right to hold one of the three seats on the private company's board of directors.

Dr. Haurwitz is currently on the board of the private company. The license agreement provides for milestone payments and royalty payments to us on future sales of licensed products by the private company. The private company may select one of several milestone payment amounts for each licensed product, which then dictates the applicable royalty rate for net sales of licensed products. We are also eligible to receive a percentage of sublicensing revenues earned by the private company. On May 15, 2020, we entered into a separate option agreement under which we granted the private company a three-year option to negotiate an exclusive, royalty-bearing, worldwide license in a defined field to certain CRISPR Cas9 patent rights controlled by us. We received a $50,000 upfront option payment and may receive annual option fees and an option exercise fee.

Amended and Restated Collaboration and License Agreement with Pioneer

Pursuant to an amendment dated December 18, 2020, to the Pioneer Agreement, Pioneer assigned the chRDNA patent family to us and we agreed to make an upfront payment of $0.5 million; to pay all patent prosecution and maintenance costs going forward; to pay up to $2.8 million in regulatory milestones for therapeutic products developed by us, our affiliates, and licensees; to pay up to $20.0 million in sales milestones over a total of four therapeutics products sold by us, our affiliates, and licensees; and to pay a percentage of sublicensing revenues received by us for licensing the chRDNA patent family. To date, we have paid Pioneer $0.8 million in sublicensing fees. Pioneer is a wholly-owned subsidiary of E. I. du Pont de Nemours and Company, which at the time held approximately 13.3% of our capital stock, assuming conversion of all preferred stock into common stock. E. I. du Pont de Nemours and Company is a wholly-owned subsidiary of Corteva, Inc.

Series C Financing

PFM Health Sciences, LP and its affiliate funds, together, or PFM, and each of Ridgeback Capital Investments LP, or Ridgeback, and Zone III Healthcare Holdings, LLC (an affiliate of Farallon Capital Management, L.L.C.), or Zone III, each purchased 1,158,949 shares of our Series C preferred stock at a purchase price of $17.257 per share, for approximately $20.0 million. Each of PFM, Ridgeback, and Zone III became a beneficial owner of more than 5% of our capital stock as a result of such transaction.

AngelList-Cces-Fund, a series of AngelList-JR-Funds, LLC, or AngelList, is a 5% stockholder of our Series A-1 preferred stock. In March 2021, we issued an aggregate of 70,122 shares of Series C preferred stock at a purchase price of $17.257 per share to an affiliate of AngelList.

Each of Pacific Continental Investment Company, LLC, or Pacific Continental, and Pontifax Global Food and Agriculture Technology LP, or Pontifax, is a 5% stockholder of our Series B preferred stock. In March 2021, we issued an aggregate of 135,850 shares of Series C preferred stock at a purchase price of $17.257 per share to Pacific Continental and 135,848 shares of Series C preferred stock at a purchase price of $17.257 per share to Pontifax and two of its affiliates.

Public Offering Participation Rights

In connection with our Series C preferred stock financing, we entered into separate letter agreements in March 2021 with each of PFM, Ridgeback, and Zone III, each of which is a beneficial owner of more than 5% of our capital stock. The letter agreements grant each of those entities a participation right to purchase up to 10% of the shares of common stock in this offering at the public offering price, in compliance with and subject to all applicable laws and regulations. The letter agreements further provide that, under certain circumstances in which those entities are unable to participate in this offering, we are required to offer each of them shares of our common stock through a separate private placement to be concurrent with this offering. Furthermore, the letter agreements provide that if we undertake a private placement that is contemporaneous with or conditioned on this offering (other than the private placement described in the preceding sentence), we are required to offer each of those entities a right to purchase up to 10% of the securities to be sold in that private placement at the same price and on the same terms as offered to the other investors in that private placement. If, as a result of the exercise of its rights in this offering, any of PFM, Ridgeback, or Zone III would beneficially own more than 9.99% of our outstanding common stock after this offering, the letter agreements require us to work with such entity, subject to applicable law, to restructure its holdings so that it does not beneficially own more than 9.99% of our outstanding common stock, with the remainder of its shares to be converted either into a non-voting common stock or warrants to acquire our common stock, such warrants to be convertible or exercisable at the entity's option only if it would not result in that entity beneficially owning more than 9.99% of our then outstanding common stock. The letter agreements provide that those entities would have been entitled to similar rights had we undertaken a certain type of direct public offering or a transaction in which our shares were exchanged for or otherwise converted into securities that are publicly listed on a securities exchange with a vehicle commonly known as a

special purpose acquisition company, in either case, in lieu of this offering. Accordingly, each of PFM, Ridgeback, and Zone III may elect to purchase shares of common stock in this offering pursuant to such participation rights.

Investor Rights Agreement

In March 2021, we entered into an amended and restated investor rights agreement, or the investor rights agreement, with each holder of our convertible preferred stock, which includes certain holders of more than 5% of each class or series of our capital stock and entities with which certain of our directors are affiliated. The investor rights agreement imposes certain affirmative obligations on us and also grants certain rights to the holders, including certain registration rights with respect to the registrable securities held by them. See "Description of Capital Stock—Registration Rights" for additional information regarding these registration rights. The investor rights agreement also provides for a right of first offer in favor of the holders of convertible preferred stock with regard to certain issuances of our capital stock. The rights of first offer will not apply to, and will terminate upon, the consummation of this offering.

Voting Agreement

In March 2021, we entered into an amended and restated voting agreement with certain holders of our common stock and convertible preferred stock, including all holders of 5% of each class or series of our capital stock. Upon the conversion of all outstanding shares of our convertible preferred stock into common stock in connection with the consummation of this offering, the amended and restated voting agreement will terminate. For a description of the amended and restated voting agreement, see the section titled "Management—Board Composition—Voting Arrangements." The prior amended and restated voting agreement with certain holders of our common stock and convertible preferred stock governed the election or appointment of board of directors prior to the March 2021 amendment and restatement of the voting agreement. Under the prior amended and restated voting agreement, each of F-Prime Capital Partners Healthcare Fund IV LP and Anterra F&A Ventures I Coöperatief U.A. had the right to designate a director. Pursuant to the March 2021 amendment and restatement of the voting agreement, and a further amendment entered into in March 2021, neither F-Prime Capital Partners Healthcare Fund IV LP nor Anterra F&A Ventures I Coöperatief U.A has the right to designate a director.

Right of First Refusal and Co-Sale Agreement

In March 2021, we entered into an amended and restated right of first refusal and co-sale agreement with certain holders of our common stock and convertible preferred stock. This agreement provides for rights of first refusal and co-sale relating to the shares of our common stock held by the parties to the agreement. Upon the consummation of this offering, the amended and restated right of first refusal agreement and co-sale agreement will terminate.

Employment or Offer Letter Agreements

We have entered into employment or offer letter agreements with certain of our executive officers. See "Executive and Director Compensation—Narrative Disclosure to Summary Compensation Table" for a further discussion of these arrangements.

We have granted stock options and/or restricted stock to our executive officers and certain of our directors. See the section of this prospectus captioned "Executive and Director Compensation."

Director and Officer Indemnification and Insurance

We have agreed to indemnify each of our directors and executive officers against certain liabilities, costs, and expenses, and have purchased directors' and officers' liability insurance. We also maintain a general

liability insurance policy that covers certain liabilities of directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers. See the section of this prospectus captioned “Management—Limitation of Directors’ and Officers’ Liability and Indemnification.”

Related Person Transaction Policy

Our board of directors intends to adopt a written related person transaction policy, which will become effective upon the completion of this offering, setting forth the policies and procedures for the review and approval or ratification of related person transactions. This policy will cover, with certain exceptions set forth in Item 404 of Regulation S-K under the Securities Act, any transaction, arrangement, or relationship, or any series of similar transactions, arrangements, or relationships, in which we were or are to be a participant, where the amount involved in any fiscal year exceeds $120,000 and a related person had, has, or will have a direct or indirect material interest, including without limitation, purchases of goods or services by or from the related person or entities in which the related person has a material interest, indebtedness, guarantees of indebtedness, and employment by us of a related person. In reviewing and approving any such transactions, our audit committee has primary responsibility to consider all relevant facts and circumstances, including, but not limited to, whether the transaction is on terms comparable to those that could be obtained in an arm’s length transaction and the extent of the related person’s interest in the transaction.

All of the transactions described in this section occurred prior to the adoption of this policy. Although we have not had a written policy for the review and approval of the transactions with related persons described in this section, our board of directors has historically reviewed and approved any transaction where a director or officer had a financial interest, including the transactions described above. Prior to approving such a transaction, the material facts as to relationship or interest of the relevant director or officer in the agreement or transaction was disclosed to our board of directors. Our board of directors took this information into account when evaluating the transaction and in determining whether such transaction was fair to us and in the best interest of all our stockholders.

PRINCIPAL STOCKHOLDERS

The following table presents information relating to the beneficial ownership of our common stock as of July 12, 2021, as if the conversion of our preferred stock into common stock on a 1.818-for-one basis had occurred, by:

- each person, or group of affiliated persons, known by us to own beneficially more than 5% of our outstanding common stock;
- each of our named executive officers and directors; and
- our executive officers and directors as a group.

The number of shares of common stock beneficially owned by each entity, person, executive officer or director is determined in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any shares of common stock over which the individual has sole or shared voting power or investment power as well as any shares of common stock that the individual has the right to acquire within 60 days of July 12, 2021, through the exercise of any option, warrant or other right. Except as otherwise indicated, and subject to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of common stock held by that person.

The percentage of outstanding common stock is computed on the basis of 37,709,191 shares of common stock outstanding as of July 12, 2021, assuming the conversion of all our outstanding shares of preferred stock on a 1.818-for-one basis into 26,234,654 shares of common stock. Shares of common stock that a person has the right to acquire within 60 days of July 12, 2021, are deemed outstanding for purposes of computing the percentage ownership of the person holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person, except with respect to the percentage ownership of all named executive officers and directors as a group. The percentage ownership information after this offering, as shown in the table below, is based upon shares outstanding after the offering, assuming the sale of 19,000,000 shares of our common stock by us in the offering, and no exercise of the underwriters' option to purchase additional shares of common stock in the offering. The following table does not reflect any potential purchases by our executive officers, directors, their affiliated entities, or holders of more than 5% of our common stock in this offering. If any shares are purchased by these persons or entities, the number and percentage of shares of our common stock beneficially owned by them after this offering will differ from the amounts set forth in the following table. Unless otherwise indicated below, the address for each beneficial owner is 2929 7th Street, Suite 105, Berkeley, California 94710.

Stockholder	Shares of Common Stock Beneficially Owned Prior to this Offering		Shares of Common Stock Beneficially Owned After this Offering	
	Shares	%	Shares	%
5% Stockholders				
F-Prime Capital Partners Healthcare Fund IV LP and affiliates(1)	3,415,499	9.06	3,323,284	5.86
E. I. du Pont de Nemours and Company(2)	3,151,311	8.36	3,151,311	5.56
James and Jennifer Doudna Cate Living Trust DTD 01/02/2014(3)	2,359,740	6.26	2,359,740	4.16
Entities affiliated with PFM Health Sciences, LP(4)	2,106,967	5.59	2,106,967	3.72
Ridgeback Capital Investments L.P.(5)	2,106,969	5.59	2,106,969	3.72
Zone III Healthcare Holdings, LLC(6)	2,106,969	5.59	2,106,969	3.72
Named Executive Officers and Directors				
Rachel E. Haurwitz(7)	3,457,338	9.14	3,457,338	6.09
Steven B. Kanner(8)	347,453	*	347,453	*
Barbara G. McClung(9)	347,333	*	347,333	*
Scott Braunstein(10)	7,286	*	7,286	*
Andrew Guggenhime(11)	14,572	*	14,572	*
Jeffrey Long-McGie(12)	—	—	—	—
Natalie R. Sacks(13)	60,596	*	60,596	*
All executive officers and directors as a group (8 persons)(14)	4,234,578	11.08	4,234,578	7.40

* Indicates beneficial ownership of less than 1% of the total issued and outstanding shares of common stock.

(1) The shares beneficially owned after this offering reflects the shares beneficially owned by F-Prime Capital Partners Healthcare Fund IV LP and affiliates as of July 20, 2021. As of July 20, 2021, such beneficial ownership consists of (a) 1,070,427 shares of common stock issuable upon conversion of our series A-1 preferred stock held by F-Prime Capital Partners Healthcare Fund IV LP, (b) 17,572 shares of common stock issuable upon conversion of our series A-1 preferred stock held by F-Prime Capital Partners Healthcare Advisors Fund IV LP, (c) 1,464,775 shares of common stock issuable upon conversion of our series A-1 preferred stock held by Impresa Fund III Limited Partnership and (d) 770,510 shares of common stock issuable upon conversion of our series B preferred stock held by F-Prime Capital Partners Healthcare Fund IV LP. The post-offering shares owned and percentage reflect the distribution on July 20, 2021 by F-Prime Capital Partners Healthcare Fund IV LP of 251,037 shares of common stock issuable upon conversion of our Series A-1 preferred stock to its partners, of which 158,823 shares were transferred to F-Prime Capital Partners Healthcare Fund IV LP's affiliates. The above entities and certain other entities related to the above entities are subject to a voting limitation that prevents these entities from voting any shares in excess of 4.99% (in the aggregate) of our total outstanding voting securities on certain matters. F-Prime Capital Partners Healthcare Advisors Fund IV LP is the general partner of F-Prime Capital Partners Healthcare Fund IV LP. F-Prime Capital Partners Healthcare Advisors Fund IV LP is solely managed by Impresa Management LLC, the managing member of its general partner and its investment manager. Impresa Fund III Limited Partnership is solely managed by Impresa Management LLC, its general partner and its investment manager. Impresa Management LLC is owned, directly or indirectly, by various shareholders and employees of FMR LLC. Impresa Management LLC is managed on a day-to-day basis by its President, B. Lane MacDonald, and as such, Mr. MacDonald may be deemed to have voting and dispositive power with respect to all shares held by F-Prime Capital Partners Healthcare Fund IV LP, F-Prime Capital Partners Healthcare Advisors Fund IV LP, and Impresa Fund III Limited Partnership. The individual and each of the entities listed above expressly disclaims beneficial ownership of the securities listed above not directly held by such individual or entity. The address of the above entities is 245 Summer Street, Boston, Massachusetts 02210.

(2) Consists of (a) 853,360 shares of common stock issuable upon conversion of our series A-1 preferred stock, (b) 1,816,383 shares of common stock issuable upon conversion of our series A preferred stock, and (c) 481,568 shares of common stock issuable upon conversion of our series B preferred stock. The address

for E. I. du Pont de Nemours and Company is 974 Centre Road, Chestnut Run Plaza, Wilmington, Delaware 19805. E. I. du Pont de Nemours and Company is a is a wholly-owned subsidiary of Corteva, Inc., which may be deemed to have beneficial ownership of the shares held by E. I. du Pont de Nemours and Company.

(3) Consists of (a) 1,874,948 shares of common stock owned directly, (b) 273,074 shares of common stock issuable upon conversion of our series A-1 preferred stock, (c) 173,193 shares of common stock issuable upon conversion of our series A preferred stock, and (d) 38,525 shares of common stock issuable upon conversion of our series B preferred stock. Dr. Doudna is one of our co-founders and a member of our SAB.

(4) Consists of (a) 1,474,879 shares of common stock issuable upon conversion of our series C preferred stock beneficially owned by PFM Healthcare Master Fund, L.P., (b) 105,347 shares of common stock issuable upon conversion of our series C preferred stock beneficially owned by Partner Investments, L.P., and (c) 526,741 shares of common stock issuable upon conversion of shares of our series C preferred stock beneficially owned, as of July 19, 2021, by PFM Healthcare Growth Equity Fund I, LP. PFM Health Sciences, LP is the investment advisor of PFM Healthcare Master Fund, L.P., Partner Investments, L.P., and PFM Healthcare Growth Equity Fund I, LP (collectively, the PFM Funds) and by virtue of those relationships may be deemed to have voting power and investment power over the securities held the PFM Funds and as a result may be deemed to have beneficial ownership of such securities. The address for PFM and the PFM Funds is 4 Embarcadero Center, Suite 3500, San Francisco, California 94111.

(5) Consists of 2,106,969 shares of common stock issuable upon conversion of our series C preferred stock. Ridgeback Capital Investments, LLC, or RCI, is the general partner of Ridgeback Capital Investments L.P., or RCILP. Pursuant to an investment management agreement, Ridgeback Capital Management, LLC, or RCM, maintains investment and voting power with respect to the securities held or controlled by RCI. Wayne Holman, an individual, controls RCM. By reason of the provisions of Rule 13d-3 of the Securities Exchange Act of 1934, as amended, RCM and RCI may be deemed to own beneficially all of shares owned directly by RCILP. Each of RCM and RCI disclaim beneficial ownership of any of the our company's securities referenced above. The address for RCILP, RCI, RCM and Mr. Holman is 30 Star Island Drive, Miami, Florida 33139.

(6) Consists of 2,106,969 shares of common stock issuable upon conversion of Series C convertible preferred stock held directly by Zone III Healthcare Holdings, LLC, or Zone III. Farallon Capital Management, L.L.C., or FCM, as the manager of Zone III, may be deemed to beneficially own such shares of common stock issuable to Zone III. Each of Philip D. Dreyfuss, Michael B. Fisch, Richard B. Fried, David T. Kim, Michael G. Linn, Rajiv A. Patel, Thomas G. Roberts, Jr., William Seybold, Andrew J.M. Spokes, John R. Warren, and Mark D. Wehrly, collectively referred to as the Farallon Managing Members, as a senior managing member or managing member, as the case may be, of FCM, in each case with the power to exercise investment discretion, may be deemed to beneficially own such shares of common stock issuable to Zone III. Each of FCM and the Farallon Managing Members disclaims beneficial ownership of any such shares of common stock. The address of Zone III Healthcare Holdings, LLC is c/o Farallon Capital Management, L.L.C., One Maritime Plaza, Suite 2100, San Francisco, California 94111.

(7) Consists of (a) 3,349,395 shares of common stock owned directly and (b) 107,943 shares subject to options exercisable within 60 days of July 12, 2021.

(8) Consists of (a) 90,900 shares of common stock owned directly and (b) 256,553 shares subject to options exercisable within 60 days of July 12, 2021.

(9) Consists of (a) 276,565 shares of common stock owned directly and (b) 70,768 shares subject to options exercisable within 60 days of July 12, 2021.

(10) Consists of 7,286 shares of common stock subject to options exercisable within 60 days of July 12, 2021.

(11) Consists of 14,572 shares of common stock subject to options exercisable within 60 days of July 12, 2021.

(12) Mr. Long-McGie is a managing director at RCM. However, because he has no voting or dispositive power over the securities held by RCILP, he disclaims beneficial ownership of all securities owned by RCILP. As disclosed above, Mr. Long-McGie intends to resign from our board of directors in connection with the closing of this offering.

(13) Consists of 60,596 shares of common stock subject to options exercisable within 60 days of July 12, 2021.

(14) Consists of (i) 3,716,860 shares of common stock held directly by our current directors and executive officers and (ii) 517,718 shares subject to options exercisable within 60 days of July 12, 2021.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws that will be in effect upon the closing of this offering. Copies of these documents will be filed with the SEC as exhibits to our registration statement, of which this prospectus forms a part. The descriptions of our common stock and preferred stock reflect changes to our capital structure that will occur upon the closing of this offering. In connection with this offering, we have effected a 1.818-for-1 forward stock split of our common stock.

General

Upon completion of this offering, our authorized capital stock will consist of 310,000,000 shares, all with a par value of $0.0001 per share, of which:

- 300,000,000 shares are designated as common stock; and
- 10,000,000 shares are designated as preferred stock.

As of July 12, 2021, we had outstanding 37,709,191 shares of common stock held of record by 112 stockholders, assuming the conversion of all of our outstanding shares of convertible preferred stock into 26,234,654 shares of our common stock in connection with the closing of this offering. Based on the number of shares of common stock outstanding as of July 12, 2021, and assuming (i) the conversion of all of our outstanding shares of convertible preferred stock, (ii) the issuance by us of 19,000,000 shares of common stock in this offering and (iii) no exercise of any options after July 12, 2021, there will be approximately 56,709,191 shares of common stock outstanding upon the closing of this offering.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders, except for certain votes that relate solely to the terms of preferred stock, and do not have cumulative voting rights in the election of directors. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of preferred stock that we may designate and issue in the future.

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive dividends as may be declared from time to time by our board of directors out of legally available funds.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets legally available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock will have no preemptive, subscription, redemption or conversion rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering will be, fully paid and nonassessable.

Preferred Stock

Under the terms of our amended and restated certificate of incorporation that will become effective immediately prior to the closing of this offering, our board of directors is authorized to direct us to issue up to 10,000,000 shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock.

The purpose of authorizing our board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions, future financings and other corporate purposes, could have the effect of making it more difficult for a third-party to acquire, or could discourage a third-party from seeking to acquire, a majority of our outstanding voting stock. Upon the closing of this offering, there will be no shares of preferred stock outstanding, and we have no present plans to issue any shares of preferred stock.

Options

As of July 12, 2021, we had outstanding options to purchase an aggregate of 5,080,046 shares of our common stock, with a weighted-average exercise price of $3.33 per share. For additional information regarding terms of our equity incentive plans, see the section of this prospectus titled “Executive and Director Compensation—Equity Incentive Plans.”

Registration Rights

The investor rights agreement grants the parties thereto certain registration rights in respect of the offer and sale of the “registrable securities” held by them, which securities include (i) the shares of our common stock issuable or issued by holders of shares of our convertible preferred stock, (ii) any common stock, or any common stock issued or issuable, directly or indirectly, upon conversion and/or exercise of any other of our securities, acquired by the investors party to the investor rights agreement after the date of the investor rights agreement and (iii) any common stock issued as, or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as, a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in the foregoing clauses (i) and (ii). The registration of the offer and sale of shares of our common stock pursuant to the exercise of these registration rights will enable the holders thereof to sell such shares without restriction under the Securities Act, when the applicable registration statement is declared effective. Under the investor rights agreement, we will pay all expenses relating to such registrations, including the fees of one counsel for the selling holders not to exceed $50,000 per registration, and the holders will pay all underwriting discounts and commissions relating to the sale of their shares. The investor rights agreement also includes customary indemnification and procedural terms.

As of July 12, 2021, there were 57 holders of shares of our common stock, including shares issuable upon the conversion of our outstanding shares of convertible preferred stock, who are entitled to such registration rights pursuant to the investor rights agreement. These registration rights will expire on the earliest to occur of (i) the closing of a deemed liquidation event, as such term is defined in our amended and restated certificate of incorporation; (ii) such time as Rule 144 or another similar exemption under the Securities Act is available for the sale of all of such holder’s shares without limitation during a three-month period without registration, and without the requirement for the Company to be in compliance with the current public information required under Rule 144(c)(1), and (iii) the third anniversary of the closing of this offering.

Demand Registration Rights

Upon completion of this offering, holders of up to 26,234,654 shares of our common stock issuable upon conversion of outstanding preferred stock will be entitled to certain demand registration rights. At any time

beginning 180 days after the effective date of the registration statement of which this prospectus is a part, the holders of not less than a majority of the registrable securities then outstanding may request that we prepare, file, and maintain a registration statement on Form S-1 to register the offer and sale of all or part of their registrable securities if the aggregate offering price, net of selling expenses, of the registrable securities requested to be registered would exceed $20.0 million. Once we are eligible to use a registration statement on Form S-3, any stockholder party or parties to the investor rights agreement may, on not more than two occasions in any 12-month period, request that we prepare, file, and maintain a registration statement on Form S-3 covering the offer and sale of all or part of their registrable securities, but only if the anticipated offering price, net of selling expenses, of the registrable securities requested to be registered would be at least $1.0 million.

Piggyback Registration Rights

In connection with this offering, holders of up to 26,234,654 shares of our common stock issuable upon conversion of outstanding preferred stock are entitled to notice of this offering and to include their shares of registrable securities in this offering. The requisite percentage of these stockholders have waived all such stockholders' rights to notice of this offering and to include their shares of registrable securities in this offering. In the event that we propose to register the offer and sale of any of our securities under the Securities Act in another offering, either for our own account or for the account of other security holders, the stockholders party to the investor rights agreement and another stockholder will be entitled to certain "piggyback" registration rights allowing them to include their registrable securities in such registration, subject to certain marketing and other conditions and limitations.

Anti-Takeover Effects of Our Certificate of Incorporation and Our Bylaws

Our amended and restated certificate of incorporation and amended and restated bylaws will contain certain provisions that are intended to enhance the likelihood of continuity and stability in the composition of our board of directors but which may have the effect of delaying, deferring, or preventing a future takeover or change in control of us unless such takeover or change in control is approved by our board of directors.

These provisions include:

Classified Board. Our amended and restated certificate of incorporation will provide that, other than any directors elected by the separate vote of one or more series of preferred stock (if any) who are entitled to elect directors, our board of directors will be divided into three classes of directors. As a result, approximately one-third of our board of directors will be elected each year. The classification of directors will have the effect of making it more difficult for stockholders to change the composition of our board. Our amended and restated certificate of incorporation will also provide that, subject to any rights of holders of preferred stock to elect additional directors under specified circumstances, the number of directors will be fixed exclusively pursuant to one or more resolutions adopted from time to time by our board of directors. Upon completion of this offering, we expect that our board of directors will have four members.

Action by Written Consent; Special Meetings of Stockholders. Our amended and restated certificate of incorporation will provide that stockholder action can be taken only at an annual or special meeting of stockholders and cannot be taken by written consent. Our amended and restated certificate of incorporation and the amended and restated bylaws will also provide that, except as otherwise required by statute and subject to the rights, if any, of the holders of any series of preferred stock, special meetings of the stockholders can only be called pursuant to a resolution adopted by a majority of our board of directors, the chair of the board, or our chief executive officer. Except as described above, stockholders will not be permitted to call a special meeting or to require our board of directors to call a special meeting.

Removal of Directors. Our amended and restated certificate of incorporation will provide that, subject to the special rights of the holders of one or more series of preferred stock (if any) to elect directors, our directors may be removed only for cause by the affirmative vote of at least 66 2/3% of the voting power of our outstanding shares of capital stock, voting together as a single class. This requirement of a supermajority vote to remove directors could enable a minority of our stockholders to prevent a change in the composition of our board.

Advance Notice Procedures. Our amended and restated bylaws will establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to the board of directors. Stockholders at an annual meeting will only be able to consider proposals or nominations specified in the company's notice of meeting or brought before the meeting specifically by or at the direction of our board of directors or by a stockholder who was a stockholder of record both at the time of giving the stockholder's notice referenced below and at the time of the meeting, who is entitled to vote at the meeting and is present in person at the meeting, and who has given our Secretary timely written notice, in proper form, of the stockholder's intention to bring that business before the meeting and must update and supplement that written notice on a timely basis as described in our amended and restated bylaws. Although the amended and restated bylaws will not give our board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting, the amended and restated bylaws may have the effect of precluding the conduct of certain business at a meeting if the proper procedures are not followed or may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control of us.

Supermajority Approval Requirements. The DGCL generally provides that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless either a corporation's certificate of incorporation or bylaws requires a greater percentage. Our amended and restated certificate of incorporation and amended and restated bylaws will provide that the affirmative vote of holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of the capital stock entitled to vote generally in the election of directors will be required to adopt, amend or repeal the amended and restated bylaws and certain specified provisions of our amended and restated certificate of incorporation. This requirement of a supermajority vote to approve amendments to our amended and restated certificate of incorporation and amended and restated bylaws could enable a minority of our stockholders to exercise veto power over any such amendments.

Authorized but Unissued Shares. Our authorized but unissued shares of common stock and preferred stock will be available for future issuance without stockholder approval. These additional shares may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions, and employee benefit plans. The existence of authorized but unissued shares of common stock and preferred stock could render more difficult or discourage an attempt to obtain control of a majority of our common stock by means of a proxy contest, tender offer, merger, or otherwise.

Exclusive Forum. Our amended and restated certificate of incorporation will require, to the fullest extent permitted by law, that derivative actions brought on behalf of the Company, actions against current or former directors, officers, employees, agents, or stockholders for breach of a fiduciary duty, and other similar actions may be brought only in specified courts in the State of Delaware. Under our amended and restated certificate of incorporation, this exclusive forum provision explicitly does not apply to actions arising under federal securities laws, including suits brought to enforce any liability or duty created by the Securities Act, Exchange Act, or any other claim for which federal courts have exclusive jurisdiction. Furthermore, our amended and restated certificate of incorporation will also provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any compliant asserting a cause of action arising under the Securities Act. Although we believe these provisions benefit us by providing increased consistency in the application of Delaware law in the types of lawsuits to which it applies, these provisions may have the effect of discouraging lawsuits against our directors and executive officers. See "Risk factors —Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States of America will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees."

Section 203 of the DGCL

Upon completion of this offering, we will be subject to the provisions of Section 203 of the DGCL. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An "interested stockholder" is a person who, together with affiliates and associates, owns, or did own within three years prior to the determination of interested stockholder status, 15% or more of the corporation's voting stock.

Under Section 203 of the DGCL, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions: (i) before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder; (ii) upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or (iii) at or after the time the stockholder became interested, the business combination was approved by our board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

A Delaware corporation may "opt out" of these provisions with an express provision in its original certificate of incorporation or an express provision in its certificate of incorporation or bylaws resulting from a stockholders' amendment approved by at least a majority of the outstanding voting shares. We have not opted out Section 203 of the DGCL. As a result, mergers or other takeover or change in control attempts of us may be discouraged or prevented.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent and registrar's address is 150 Royall Street, Canton, Massachusetts 02021.

Listing

Our common stock has been approved for listing on the Nasdaq Global Select Market under the symbol "CRBU".

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock. Future sales of substantial amounts of our common stock in the public market could adversely affect market prices prevailing from time to time. Furthermore, because only a limited number of shares will be available for sale shortly after this offering due to existing contractual and legal restrictions on resale as described below, there may be sales of substantial amounts of our common stock in the public market after the restrictions lapse. This may adversely affect the prevailing market price and our ability to raise equity capital in the future.

Based on the number of shares of our common stock outstanding as of July 12, 2021, upon completion of this offering, assuming the conversion of all of our convertible preferred stock outstanding as of July 12, 2021, into an aggregate of 26,234,654 shares of our common stock in connection with the completion of this offering, and no exercise of the underwriters' option to purchase additional shares, we will have an aggregate of approximately 56,709,191 shares of common stock outstanding. Of these shares, 19,000,000 shares, or 21,850,000 shares if the underwriters exercise their option to purchase additional shares in full, sold in this offering will be freely transferable without restriction or registration under the Securities Act, except for any shares purchased by one of our existing "affiliates," as that term is defined in Rule 144 under the Securities Act.

The remaining 37,709,191 shares of common stock outstanding will be "restricted shares" as defined in Rule 144 and substantially all of these restricted shares will be subject to the 180-day lock-up period under the lock-up agreements as described below. Restricted shares and the shares of common stock into which such securities are convertible may be sold in the public market only if registered or if they qualify for an exemption from registration under Rules 144 or 701 of the Securities Act, which rules are summarized below.

We may issue shares of common stock from time to time as consideration for future acquisitions, investments, or other corporate purposes. In the event that any such acquisition, investment, or other transaction is significant, the number of shares of common stock that we may issue may in turn be significant. We may also grant registration rights covering those shares of common stock issued in connection with any such acquisition and investment.

In addition, the shares of common stock reserved for future issuance under the 2021 Plan, the 2021 ESPP, and the 2013 Plan will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements, a registration statement under the Securities Act, or an exemption from registration, including Rule 144 and Rule 701.

Rule 144

In general, a person who has beneficially owned restricted shares of our common stock for at least six months would be entitled to sell such securities, provided that (i) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale; and (ii) we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Persons who have beneficially owned restricted shares of our common stock for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately 567,091 shares immediately after this offering, assuming no exercise of the underwriters' option to purchase additional shares; or
- the average weekly trading volume of shares of our common stock on the Nasdaq Global Select Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale;

provided, in each case, that we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information, and notice provisions of Rule 144 to the extent applicable.

Rule 701

In general, under Rule 701 as currently in effect, any of our employees, directors, officers, consultants, or advisors who acquired common stock from us in connection with a written compensatory stock or option plan or other written agreement in compliance with Rule 701 before the effective date of the registration statement of which this prospectus is a part, to the extent such common stock is not subject to a lock-up agreement, and who are not our "affiliates" as defined in Rule 144 during the immediately preceding 90 days, is entitled to rely on Rule 701 to resell such shares beginning 90 days after the date of this prospectus in reliance on Rule 144, but without complying with the notice, manner of sale, public information requirements, or volume limitation provisions of Rule 144. Persons who are our "affiliates" may resell those shares beginning 90 days after the date of this prospectus without compliance with minimum holding period requirements under Rule 144, subject to the terms of the lock-up agreement referred to below, if applicable.

The SEC has indicated that Rule 701 will apply to typical options granted by an issuer before it becomes subject to the reporting requirements of the Exchange Act, along with the shares acquired upon exercise of such options, including exercises after an issuer becomes subject to the reporting requirements of the Exchange Act.

Lock-Up Agreements

In connection with this offering, we and each of our directors and executive officers and substantially all of our other security holders have agreed that, without the prior written consent of BofA Securities, Inc., Citigroup Global Markets Inc., and SVB Leerink LLC, on behalf of the underwriters, we and they will not, subject to limited exceptions, during the period ending 180 days after the date of this prospectus:

- offer, pledge, sell, 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, lend, or otherwise transfer or dispose of, directly or indirectly, shares of our common stock or any securities convertible into or exchangeable for shares of our common stock whether now owned or hereafter acquired or with respect to which such holder has or acquires the power of disposition, of the lock-up securities;

- enter into any swap or other agreement or transaction that transfers to another, in whole or in part, directly or indirectly, any of the economic consequences of ownership of the lock-up Securities, whether any such swap or transaction is to be settled by delivery of our common stock or such other securities, in cash or otherwise; or

- publicly disclose the intention to do any of the foregoing.

Each of our directors and executive officers and the holders of substantially all of our outstanding stock and stock options have also agreed during such 180-day period not to make any demand for, or exercise any right with respect to, or confidentially submit or cause to be filed or confidentially submitted any registration statement under the Securities Act with respect to, the registration of shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock, or warrants or other rights to purchase shares of our common stock or any such securities.

Upon the expiration of the 180-day lock-up period, substantially all of the shares subject to such lock-up restrictions will become eligible for sale, subject to the limitations discussed above. For a further description of these lock-up agreements, see “Underwriting.”

Equity Plans

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all shares of our common stock subject to outstanding options and shares of our common stock reserved for issuance under the 2013 Plan, the 2021 Plan, and the 2021 ESPP. We expect to file the registration statement covering these shares shortly after the date of this prospectus. The registration statement will be effective immediately upon filing and will permit the resale of such shares by non-affiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market, subject to compliance with the resale provisions of Rule 144 and the lock-up agreements described above, if applicable. For a more complete discussion of our stock plans, see “Executive and Director Compensation—Equity Incentive Plans.”

Registration Rights

Upon the closing of this offering, the holders of 26,621,668 shares of our common stock (including shares of our common stock issuable upon the conversion of all outstanding shares of our convertible preferred stock) or certain of their transferees will be entitled to various rights with respect to the registration of these shares under the Securities Act. Registration of these shares under the Securities Act would result in these shares becoming fully tradable without restriction under the Securities Act immediately upon the effectiveness of the registration, except for shares purchased by affiliates. See “Description of Capital Stock—Registration Rights” for additional information. Shares covered by a registration statement will be eligible for sale in the public market upon the expiration or release from the terms of the lock-up agreement.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a general discussion of the material U.S. federal income tax consequences applicable to non-U.S. holders (as defined below) with respect to the acquisition, ownership, and disposition of our common stock, but does not purport to be a complete analysis of all the potential U.S. federal income tax considerations relating thereto. In addition, this discussion does not describe any state, local, or non-U.S. income, estate, gift, or other tax consequences of acquiring, holding, and disposing of our common stock. This discussion is based upon the applicable provisions of the Internal Revenue Code of 1986, as amended, which we refer to as the Tax Code, applicable U.S. Treasury regulations promulgated thereunder, or the Treasury Regulations, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service, or the IRS, all as of the date hereof. These authorities may change or be subject to differing interpretations, possibly on a retroactive basis. Any such changes could alter the tax consequences to non-U.S. holders described below. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences to a non-U.S. holder of the purchase, ownership, and disposition of our common stock.

This discussion is limited to non-U.S. holders who purchase our common stock offered by this prospectus and who hold our common stock as a "capital asset" within the meaning of Section 1221 of the Tax Code (generally, property held for investment). This discussion does not address all of the potential U.S. federal income tax consequences applicable to a non-U.S. holder's particular circumstances, including the impact of the 3.8% Medicare contribution tax on net investment income or the alternative minimum tax. In addition, this discussion does not address the U.S. federal income tax consequences applicable to non-U.S. holders that are subject to special rules, including:

- U.S. expatriates, former citizens, or former long-term residents of the United States;
- banks, insurance companies, or other financial institutions;
- real estate investment trusts or regulated investment companies;
- "controlled foreign corporations," "passive foreign investment companies," or corporations that accumulate earnings to avoid U.S. federal income tax;
- brokers, dealers, or traders in securities, commodities, or currencies;
- persons who have elected to use a mark-to-market method of accounting for their securities holdings;
- partnerships or other entities or arrangements treated as partnerships, pass-throughs, or disregarded entities for U.S. federal income tax purposes (or investors in such entities), S corporations or other pass-through entities (including hybrids);
- tax-exempt organizations, governmental organizations, or tax-qualified retirement plans;
- persons deemed to sell our common stock under the constructive sale provisions of the Tax Code;
- persons who acquired our common stock pursuant to the exercise of any employee stock option or otherwise as compensation or through a qualified retirement plan;
- persons who acquired our common stock pursuant to the exercise of warrants or conversion rights under convertible instruments;

- persons who hold our common stock as part of a straddle, hedge, conversion transaction, synthetic security, other integrated investment, or other risk reduction strategy;
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Tax Code and entities all of the interests of which are held by qualified foreign pension funds; and
- persons that own, or have owned, actually or constructively, more than 5% of our common stock.

In addition, if a partnership, including any entity or arrangement classified as a partnership for U.S. federal income tax purposes, holds our common stock, the U.S. federal income tax treatment of a partner in the partnership generally will depend on the status of the partner, the activities of the partnership, and certain determinations made at the partner level. Accordingly, partnerships that hold our common stock, and partners in such partnerships, should consult their tax advisors regarding the U.S. federal income tax consequences to them of the acquisition, ownership, and disposition of our common stock.

THE FOLLOWING DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE INVESTORS ARE URGED TO CONSULT THEIR TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF ACQUIRING, OWNING, AND DISPOSING OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL, OR NON-U.S. TAX LAWS, OR UNDER ANY U.S. FEDERAL NON-INCOME TAX LAWS, OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of Non-U.S. Holder

As used in this discussion, the term "non-U.S. holder" means any beneficial owner of our common stock that is, for U.S. federal income tax purposes, neither a "U.S. person" nor a partnership (nor any other entity that is treated as a partnership for U.S. federal income tax purposes). A "U.S. person" is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual citizen or resident of the United States;
- a corporation or other entity taxable as a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (i) is subject to the primary supervision of a U.S. court and the control of one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Tax Code) or (ii) has a valid election in effect under applicable Treasury Regulations to be treated as a United States person for U.S. federal income tax purposes.

Distributions of Our Common Stock

As described in the section of this prospectus entitled "Dividend Policy," we have not paid and we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we make distributions of cash or property on our common stock, such distributions generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. If a distribution exceeds our current and accumulated earnings and profits, the excess will be treated first as a tax-free return of capital that reduces a non-U.S. holder's adjusted basis in such holder's common stock, but not below zero. Any excess will be treated as gain realized on the sale or other disposition of our common stock and will be treated as described under the section titled "—Sale, Exchange or Other Disposition of Our Common Stock," below.

Subject to the discussions below regarding effectively connected income, backup withholding, and FATCA (as hereinafter defined), dividends paid to a non-U.S. holder of our common stock generally will be subject to U.S. federal withholding tax at a rate of 30%, or such lower rate specified by an applicable income tax treaty, if any. To receive the benefit of a reduced treaty rate, a non-U.S. holder must furnish us or the applicable withholding agent with a valid IRS Form W-8BEN or IRS Form W-8BEN-E (or applicable successor form) certifying such holder's qualification for the reduced withholding rate. This certification must be provided to us or the applicable withholding agent before the payment of dividends and must be updated periodically. If a non-U.S. holder holds the stock through a financial institution or other intermediary, the non-U.S. holder will be required to provide appropriate documentation to the intermediary, which will then be required to provide certification to the applicable withholding agent, either directly or through other intermediaries. A non-U.S. holder that does not timely furnish the required documentation, but qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty and the specific manner of claiming the benefits of such treaty.

If a non-U.S. holder holds our common stock in connection with the non-U.S. holder's conduct of a trade or business within the United States, and dividends paid on our common stock are effectively connected with such non-U.S. holder's U.S. trade or business (and, if required by an applicable treaty, the non-U.S. holder maintains a permanent establishment within the United States to which such dividends are attributable), such non-U.S. holder generally will be exempt from the U.S. federal withholding tax described above, and instead will be subject to U.S. federal income tax at ordinary U.S. federal income tax rates (which tax is imposed on a net income basis). To claim the exemption from withholding, the non-U.S. holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI (or applicable successor form), certifying that the dividends are effectively connected with the non-U.S. holder's conduct of a trade or business within the United States. In the case of a non-U.S. holder that is a foreign corporation, such non-U.S. holder may also be subject to a 30% "branch profits tax" on such effectively connected dividend income unless such corporate non-U.S. holder qualifies for a lower rate under an applicable income tax treaty. Non-U.S. holders should consult their tax advisors regarding any applicable income tax treaties that may provide for different rules.

Sale, Exchange, or Other Disposition of Our Common Stock

Subject to the discussions below regarding backup withholding and FATCA, a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized upon the sale, exchange, or other disposition, which we collectively refer to as a disposition, of our common stock, unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business within the United States, and if an income tax treaty applies, is attributable to a permanent establishment maintained by the non-U.S. holder within the United States;

- the non-U.S. holder is an individual who is present in the United States for a period or periods aggregating 183 days or more during the taxable year of the disposition and certain other requirements are met; or

- our common stock constitutes a U.S. real property interest, or USRPI, as defined in the Tax Code, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five-year period preceding such disposition or such non-U.S. holder's holding period for the relevant shares of our common stock. Generally, a corporation is a USRPHC only if the fair market value of its USRPIs equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business.

If the gain is described in the first bullet point above, the non-U.S. holder generally will be subject to U.S. federal income tax on a net income basis at regular rates with respect to such gain in the same manner as if such non-U.S. holder were a U.S. person. In addition, if the non-U.S. holder is a corporation for U.S. federal income tax purposes, it may also be subject to a 30% branch profits tax (or such lower rate specified by an applicable treaty) on such effectively connected gain, as adjusted for certain items.

A non-U.S. holder described in the second bullet point above generally will be subject to U.S. federal income tax with respect to such gain at a flat 30% rate (or such lower rate specified by an applicable income tax treaty), which may be offset by certain U.S. source capital losses of the non-U.S. holder during the taxable year of disposition (even though the individual is not considered a resident of the United States), provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and we do not anticipate that we will become, a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our USRPIs relative to the fair market value of our other business assets and our non-U.S. real property interests, there can be no assurance that we will not become a USRPHC in the future. Even if we were to become a USRPHC, a non-U.S. holder would not be subject to U.S. federal income tax on a disposition of our common stock by reason of our status as a USRPHC so long as (i) shares of our common stock are "regularly traded" on an "established securities market" (as defined by applicable Treasury Regulations) during the calendar year in which such disposition occurs and (ii) such non-U.S. holder does not own and is not deemed to own (directly, indirectly or constructively) more than 5% of our outstanding common stock at any time during the shorter of the five-year period ending on the date of the disposition of our common stock by the non-U.S. holder or the non-U.S. holder's holding period for our common stock.

Non-U.S. holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Backup Withholding and Information Reporting

Backup withholding, currently at a rate of 24%, generally will not apply to dividends paid to a non-U.S. holder on, or to the gross proceeds paid to a non-U.S. holder from a disposition of, our common stock, provided that the non-U.S. holder furnishes the required certification for its non-U.S. status, such as by providing a valid IRS Form W-8BEN, IRS Form W-8BEN-E, IRS Form W-8ECI, or certain other requirements are met. Backup withholding may apply if the payor has actual knowledge, or reason to know, that the holder is a U.S. person who is not an exempt recipient.

We are required to report annually to the IRS the amount of any dividends paid to a non-U.S. holder, regardless of whether we actually withheld any tax. Copies of the information returns reporting such dividends and the amount withheld may also be made available to the tax authorities in the country in which the non-U.S. holder resides under the provisions of an income tax treaty or other agreement between the United States and the tax authorities in such country. In addition, proceeds from the disposition by a non-U.S. holder of our common stock that is transacted within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person, or the holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Backup withholding is not an additional tax. The U.S. income tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If backup withholding results in an overpayment of taxes, a refund or credit may generally be obtained from the IRS, provided that the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Tax Code (such sections are commonly referred to as the Foreign Account Tax Compliance Act, or FATCA) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends paid to a non-U.S. holder on, or subject to the proposed Treasury Regulations discussed below, gross proceeds from the disposition of, our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Tax Code), unless (i) the foreign financial institution undertakes certain diligence and reporting obligations, (ii) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Tax Code) or furnishes identifying information regarding each substantial United States owner, or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in clause (i) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States owned foreign entities" (each as defined in the Tax Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock. While withholding under FATCA would also have applied to payments of gross proceeds from the disposition of stock on or after January 1, 2019, proposed Treasury Regulations released on December 13, 2018 provide for the elimination of FATCA withholding on payments of gross proceeds entirely. In its preamble to the Proposed Regulations, the U.S. Treasury Department stated that taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to an investment in our common stock.

UNDERWRITING

BofA Securities, Inc., Citigroup Global Markets Inc., and SVB Leerink LLC are acting as representatives of each of the underwriters named below. Subject to the terms and conditions set forth in an underwriting agreement among us and the underwriters, we have agreed to sell to the underwriters, and each of the underwriters has agreed, severally and not jointly, to purchase from us, the number of shares of common stock set forth opposite its name below.

Underwriter	Number of Shares
BofA Securities, Inc.	6,935,000
Citigroup Global Markets Inc.	6,365,000
SVB Leerink LLC	5,700,000
Total	19,000,000

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to purchase all of the shares sold under the underwriting agreement if any of these shares are purchased. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as, and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officer's certificates and legal opinions. The underwriters reserve the right to withdraw, cancel, or modify offers to the public and to reject orders in whole or in part.

Commissions and Discounts

The representatives have advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus and to dealers at that price less a concession not in excess of $0.672 per share. After the initial offering, the public offering price, concession, or any other term of the offering may be changed.

The following table shows the public offering price, underwriting discount, and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their option to purchase additional shares.

	Per Share	Without Option	With Option
Public offering price	$ 16.00	$ 304,000,000	$ 349,600,000
Underwriting discount	$ 1.12	$ 21,280,000	$ 24,472,000
Proceeds, before expenses, to us	$ 14.88	$ 282,720,000	$ 325,128,000

The expenses of the offering, not including the underwriting discount, are estimated at $3.8 million and are payable by us. We have also agreed to reimburse the underwriters for their expenses relating to clearance of this offering with the Financial Industry Regulatory Authority in an amount up to $50,000.

Option to Purchase Additional Shares

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus, to purchase up to 2,850,000 additional shares at the public offering price, less the underwriting discount. If the underwriters exercise this option, each will be obligated, subject to conditions contained in the underwriting agreement, to purchase a number of additional shares proportionate to that underwriter's initial amount reflected in the above table.

No Sales of Similar Securities

We, our executive officers, and directors and substantially all of our other existing security holders have agreed not to sell or transfer any common stock or securities convertible into, exchangeable for, exercisable for, or repayable with common stock, for 180 days after the date of this prospectus without first obtaining the written consent of BofA Securities, Inc., Citigroup Global Markets Inc., and SVB Leerink LLC. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly:

- offer, pledge, sell, or contract to sell any common stock;
- sell any option or contract to purchase any common stock;
- purchase any option or contract to sell any common stock;
- grant any option, right, or warrant for the sale of any common stock;
- lend or otherwise dispose of or transfer any common stock;
- request or demand that we file or make a confidential submission of a registration statement related to the common stock;
- enter into any swap or other agreement that transfers, in whole or in part, the economic consequence of ownership of any common stock whether any such swap or transaction is to be settled by delivery of shares or other securities, in cash, or otherwise; or
- publicly disclose the intention to do any of the foregoing.

This lock-up provision applies to common stock and to securities convertible into or exchangeable or exercisable for or repayable with common stock. It also applies to common stock owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition.

Nasdaq Global Select Market Listing

Our shares of common stock have been approved for listing on the Nasdaq Global Select Market under the symbol "CRBU."

Before this offering, there has been no public market for our common stock. The initial public offering price was determined through negotiations between us and the representatives. In addition to prevailing market conditions, the factors considered in determining the initial public offering price were:

- the valuation multiples of publicly traded companies that the representatives believe to be comparable to us;
- our financial information;

- the history of, and the prospects for, our company and the industry in which we compete;
- an assessment of our management, its past and present operations, and the prospects for, and timing of, our future revenues;
- the present state of our development; and
- the above factors in relation to market values and various valuation measures of other companies engaged in activities similar to ours.

An active trading market for the shares may not develop. It is also possible that after the offering the shares will not trade in the public market at or above the initial public offering price.

The underwriters do not expect to sell more than 5% of the shares in the aggregate to accounts over which they exercise discretionary authority.

Price Stabilization, Short Positions, and Penalty Bids

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our common stock. However, the representatives may engage in transactions that stabilize the price of the common stock, such as bids or purchases to peg, fix, or maintain that price.

In connection with the offering, the underwriters may purchase and sell our common stock in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales, and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. “Covered” short sales are sales made in an amount not greater than the underwriters’ option to purchase additional shares described above. The underwriters may close out any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the option granted to them. “Naked” short sales are sales in excess of such option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of shares of common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Global Select Market, in the over-the-counter market, or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

Electronic Distribution

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

Other Relationships

Some of the underwriters and their affiliates have engaged in, and may in the future engage in, investment banking and other commercial dealings in the ordinary course of business with us or our affiliates. They have received, or may in the future receive, customary fees and commissions for these transactions.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Notice to Prospective Investors in the European Economic Area

In relation to each member state of the European Economic Area, or each, a Relevant State, no Shares have been offered or will be offered pursuant to this offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that offers of shares may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

a. to any legal entity which is a qualified investor as defined under the Prospectus Regulation;

b. to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

c. in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require the Company or any representative to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

Each person in a Relevant State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged, and agreed to and with the Company and the representatives that it is a qualified investor within the meaning of the Prospectus Regulation.

In the case of any shares being offered to a financial intermediary as that term is used in Article 5(1) of the Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged, and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in a Relevant State to qualified investors, in circumstances in which the prior consent of the representatives have been obtained to each such proposed offer or resale.

The Company, the underwriters, and their respective affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements, and agreements.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression "Prospectus Regulation" means Regulation (EU) 2017/1129.

The above selling restriction is in addition to any other selling restrictions set out below.

In connection with the offering, the underwriters are not acting for anyone other than the Company and will not be responsible to anyone other than the Company for providing the protections afforded to their clients nor for providing advice in relation to the offering.

Notice to Prospective Investors in the United Kingdom

In relation to the United Kingdom, or the UK, no shares have been offered or will be offered pursuant to this offering to the public in the UK prior to the publication of a prospectus in relation to the shares which has been approved by the Financial Conduct Authority in the UK in accordance with the UK Prospectus Regulation and the FSMA, except that offers of shares may be made to the public in the UK at any time under the following exemptions under the UK Prospectus Regulation and the FSMA:

a. to any legal entity which is a qualified investor as defined under the UK Prospectus Regulation;

b. to fewer than 150 natural or legal persons (other than qualified investors as defined under the UK Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

c. at any time in other circumstances falling within section 86 of the FSMA,

provided that no such offer of shares shall require the Company or any Manager to publish a prospectus pursuant to Section 85 of the FSMA or Article 3 of the UK Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation.

Each person in the UK who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged, and agreed to and with the Company and the representatives that it is a qualified investor within the meaning of the UK Prospectus Regulation.

In the case of any shares being offered to a financial intermediary as that term is used in Article 5(1) of the UK Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged, and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public other than their offer or resale in the UK to qualified investors, in circumstances in which the prior consent of the representatives have been obtained to each such proposed offer or resale.

The Company, the underwriters, and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements, and agreements.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares in the UK means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, the

expression “UK Prospectus Regulation” means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018, and the expression “FSMA” means the Financial Services and Markets Act 2000.

In connection with the offering, the underwriters are not acting for anyone other than the Company and will not be responsible to anyone other than the Company for providing the protections afforded to their clients nor for providing advice in relation to the offering.

This document is for distribution only to persons who (i) have professional experience in matters relating to investments and who qualify as investment professionals within the meaning of Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the Financial Promotion Order, (ii) are persons falling within Article 49(2)(a) to (d) (“high net worth companies, unincorporated associations etc.”) of the Financial Promotion Order, (iii) are outside the United Kingdom, or (iv) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000, as amended, or the FSMA) in connection with the issue or sale of any securities may otherwise lawfully be communicated or caused to be communicated (all such persons together being referred to as “relevant persons”). This document is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is available only to relevant persons and will be engaged in only with relevant persons.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or the SIX, or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, or the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority, or FINMA, and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority, or the DFSA. This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The shares to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the shares offered should conduct their own due diligence on the shares. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement, or other disclosure document has been lodged with the Australian Securities and Investments Commission, or the ASIC, in relation to the offering.

This prospectus does not constitute a prospectus, product disclosure statement, or other disclosure document under the Corporations Act 2001, or the Corporations Act, and does not purport to include the information required for a prospectus, product disclosure statement, or other disclosure document under the Corporations Act.

Any offer in Australia of the shares may only be made to persons, or the Exempt Investors, who are "sophisticated investors" (within the meaning of section 708(8) of the Corporations Act), "professional investors" (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the shares without disclosure to investors under Chapter 6D of the Corporations Act.

The shares applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring shares must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation, or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives, and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation, or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations, and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, "Japanese Person" shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, the shares were not offered or sold or caused to be made the subject of an invitation for subscription or purchase and will not be offered or sold or caused to be made the subject of an invitation for subscription or

purchase, and this prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares, has not been circulated or distributed, nor will it be circulated or distributed, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time, or the SFA) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

a. a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

b. a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor, securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

(i) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(ii) where no consideration is or will be given for the transfer;

(iii) where the transfer is by operation of law; or

(iv) as specified in Section 276(7) of the SFA.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts*, or NI 33-105, the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Reed Smith LLP, Los Angeles, California, and New York, New York. Certain legal matters will be passed upon for the underwriters by Shearman & Sterling LLP, New York, New York.

EXPERTS

The financial statements as of December 31, 2019 and 2020 and for each of the two years in the period ended December 31, 2020 included in this Registration Statement have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report appearing herein. Such financial statements are included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the common stock offered hereby. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to the Company and its common stock, reference is made to the registration statement and the exhibits and any schedules filed therewith. Statements contained in this prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance, if such contract or document is filed as an exhibit, reference is made to the copy of such contract or other document filed as an exhibit to the registration statement, each statement being qualified in all respects by such reference. The SEC maintains a website at *www.sec.gov*, from which interested persons can electronically access the registration statement, including the exhibits and any schedules thereto. The information on the SEC's website is not part of this prospectus, and any references to this website or any other website are inactive textual references only.

As a result of the offering, we will become subject to the information and reporting requirements of the Exchange Act and we will be required to file periodic reports and other information with the SEC. These periodic reports and other information will be available on the SEC's website referred to above. We also maintain a website at *www.caribou bio.com*, at which, following this offering, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. Our website and the information contained therein or connected thereto shall not be deemed to be incorporated into this prospectus or the registration statement of which it forms a part. We have included our website address as an inactive textual reference only.

CARIBOU BIOSCIENCES, INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of
Caribou Biosciences, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Caribou Biosciences, Inc. and its subsidiaries (the "Company") as of December 31, 2019 and 2020, the related consolidated statements of operations and comprehensive loss, convertible preferred stock and stockholders' equity (deficit), and cash flows, for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2020, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

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

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

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

/s/ Deloitte & Touche LLP

San Francisco, California
May 7, 2021 (July 19, 2021 as to the effects of the forward stock split described in Note 2 and Note 16)

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

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
AS OF DECEMBER 31, 2019 AND 2020
(in thousands, except share and per share amounts)

	2019	2020
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$41,070	$ 15,953
Accounts receivable	5	150
Contract assets ($0 and $250 from related party, respectively)	836	1,328
Other receivables	3,141	3,682
Investment in equity securities	8,401	—
Prepaid expenses and other current assets	3,555	3,193
Total current assets	57,008	24,306
INVESTMENTS IN EQUITY SECURITIES, LONG-TERM	—	7,626
PROPERTY AND EQUIPMENT—NET	4,332	3,502
OTHER ASSETS, LONG-TERM	593	612
TOTAL ASSETS	$61,933	$ 36,046
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)		
CURRENT LIABILITIES:		
Accounts payable ($0 and $500 to related party, respectively)	$ 2,537	$ 2,601
Accrued expenses and other current liabilities	6,824	8,973
Promissory note—PPP loan	—	654
Deferred revenue, current portion	717	161
Total current liabilities	10,078	12,389
LONG-TERM LIABILITIES:		
Deferred revenue, net of current portion ($0 and $50 from related party, respectively)	986	937
Deferred rent and lease incentive liability	900	925
Promissory note—PPP loan, net of current portion	—	924
Success payments liability	—	2,654
Other liabilities	533	176
Deferred tax liabilities	650	155
Total liabilities	13,147	18,160
COMMITMENTS AND CONTINGENCIES (Note 9)	—	—
CONVERTIBLE PREFERRED STOCK, par value $0.0001 per share—7,766,582 shares authorized at December 31, 2019 and 2020; 7,766,582 shares issued and outstanding at December 31, 2019 and 2020; (liquidation preference of $41,620 at December 31, 2019 and 2020)	41,323	41,323
STOCKHOLDERS' EQUITY (DEFICIT):		
Common stock, par value $0.0001 per share—28,259,184 and 28,933,380 shares authorized at December 31, 2019 and 2020, respectively; 8,839,205 and 9,710,830 shares issued and outstanding at December 31, 2019 and 2020, respectively	1	1
Additional paid-in capital	4,025	7,433
Retained earnings (accumulated deficit)	3,437	(30,871)
Total stockholders' equity (deficit)	7,463	(23,437)
TOTAL LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)	$61,933	$ 36,046

See accompanying notes to consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2020
(in thousands, except share and per share amounts)

	2019	2020
Licensing and collaboration revenue ($0 and $7,250 from related party, respectively)	$ 5,788	$ 12,361
Operating expenses:		
Research and development	23,635	34,425
General and administrative	16,458	14,060
Total operating expenses	40,093	48,485
Loss from operations	(34,305)	(36,124)
Other income (expense):		
Interest income	1,047	236
Interest expense	(4)	(20)
Change in fair value of equity securities	2,294	(733)
Other income	—	514
Total other income (expense)	3,337	(3)
Net loss before provision for income taxes	(30,968)	(36,127)
Benefit from income taxes	(7,537)	(1,819)
Net loss and comprehensive loss	$ (23,431)	$ (34,308)
Net loss per share, basic and diluted	$ (2.80)	$ (4.01)
Weighted-average common shares outstanding, basic and diluted	8,374,674	8,546,741

See accompanying notes to consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2020
(in thousands, except share amounts)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
BALANCE—December 31, 2018	7,766,582	$ 41,323	8,705,171	$ 1	$ 2,574	$ 27,372	$ 29,947
Retroactive adjustment to beginning retained earnings for adoption of ASC 606 (Note 2)	—	—	—	—	—	(504)	(504)
Issuance of common stock on exercise of options	—	—	134,033	—	217	—	217
Stock-based compensation expense	—	—	—	—	1,234	—	1,234
Net loss and comprehensive loss	—	—	—	—	—	(23,431)	(23,431)
BALANCE—December 31, 2019	7,766,582	$ 41,323	8,839,204	$ 1	$ 4,025	$ 3,437	$ 7,463
Issuance of common stock to acquire in-process research and development (see Note 4)	—	—	674,196	—	2,136	—	2,136
Issuance of common stock on exercise of options	—	—	197,429	—	270	—	270
Stock-based compensation expense	—	—	—	—	1,002	—	1,002
Net loss and comprehensive loss	—	—	—	—	—	(34,308)	(34,308)
BALANCE—December 31, 2020	7,766,582	$ 41,323	9,710,829	$ 1	$ 7,433	$ (30,871)	$ (23,437)

See accompanying notes to consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2020
(in thousands)

	2019	2020
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$(23,431)	$(34,308)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	751	900
Loss on disposal of fixed assets	1	70
Change in fair value of equity securities	(2,294)	733
Non-cash consideration for licensing and collaboration revenue (Note 4) ($0 and $7,500 from related party, respectively)	—	(7,577)
Stock-based compensation expense	1,234	1,002
Fair value of success payments liability	—	2,654
Acquired in-process research and development (Note 4)	—	3,134
Changes in operating assets and liabilities:		
Accounts receivable	617	(146)
Contract assets	(836)	(492)
Other receivables	(870)	(540)
Prepaid expenses and other current assets	(1,348)	362
Other assets	(298)	(19)
Accounts payable	1,176	43
Accrued expenses and other current liabilities	703	2,291
Deferred revenue, current and long-term	(798)	(605)
Deferred rent and lease incentive liability	75	25
Other liabilities	425	(247)
Deferred tax liabilities	(7,113)	(495)
Net cash used in operating activities	(32,006)	(33,215)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Proceeds from sale of equity securities	28,117	7,668
Purchases of property and equipment	(884)	(317)
Proceeds from sale of property and equipment	—	10
Cash paid to acquire in-process research and development	—	(998)
Net cash provided by investing activities	27,233	6,363
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from promissory note	—	1,578
Proceeds from common stock options exercised	217	270
Principal payments of capital leases	(45)	(113)
Net cash provided by financing activities	172	1,735
NET DECREASE IN CASH AND CASH EQUIVALENTS	(4,601)	(25,117)
CASH AND CASH EQUIVALENTS—Beginning of year	45,671	41,070
CASH AND CASH EQUIVALENTS—End of year	$ 41,070	$ 15,953
SUPPLEMENTAL CASH FLOW INFORMATION:		
Cash paid for income taxes	$ 1,809	$ 21
SUPPLEMENTAL SCHEDULE OF NON-CASH INVESTING AND FINANCING ACTIVITES:		
Purchases of property and equipment unpaid at period end	$ 886	$ 15
Capital lease financing for purchase of assets	$ 276	$ —
Issuance of common stock to acquire in-process research and development (Note 4)	$ —	$ 2,136
Shares received as consideration for licensing and collaboration revenue	$ —	$ 7,577

See accompanying notes to consolidated financial statements.

CARIBOU BIOSCIENCES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
AS OF AND FOR THE YEARS ENDED DECEMBER 31, 2019 AND 2020

1. Description of the Business, Organization, and Liquidity

Business and Organization

Caribou Biosciences, Inc. (the "Company") is a clinical-stage CRISPR genome-editing biotechnology company. The Company is developing an internal pipeline of off-the-shelf CAR-T and CAR-NK cell therapies. It was incorporated in October 2011 as a Delaware corporation and is headquartered in Berkeley, California. The Company has four wholly-owned subsidiaries: Caribou Therapeutics Holdco, LLC, incorporated in Delaware in July 2014 and dissolved in December 2020; Antler Holdco, LLC, incorporated in Delaware in April 2019; Microbe Holdco, LLC, incorporated in Delaware in June 2020; and Arboreal Holdco, LLC, incorporated in Delaware in November 2020. The Company's wholly-owned subsidiaries hold interest in the Company's equity investments and do not have operating activities.

Liquidity

The Company has incurred net operating losses and negative cash flows from operations since its inception and had an accumulated deficit of $30.9 million as of December 31, 2020. During the year ended December 31, 2020, the Company incurred a net loss of $34.3 million and used $33.2 million of cash in operations. As of December 31, 2020, the Company had cash and cash equivalents of $16.0 million. The Company expects to continue to incur substantial losses, and its ability to achieve and sustain profitability will depend on the successful development, approval and commercialization of product candidates and on the achievement of sufficient revenues to support its cost structure. The Company may never achieve profitability, and unless and until it does, the Company will need to continue to raise additional capital. Management expects that existing cash and cash equivalents of $16.0 million; cash received in connection with the issuance of Series C convertible preferred stock shares with approximate proceeds of $108.8 million, net of issuance costs of $6.2 million, in March 2021 (Note 16); and an upfront cash payment for the license and collaboration agreement with AbbVie of $30.0 million in March 2021 (Note 16) will be sufficient to fund its current operating plan for at least the next 12 months from the date of issuance of these consolidated financial statements.

2. Summary of Significant Accounting Policies

Forward Stock Split

In July 2021, the Company's board of directors approved an amendment to the Company's certificate of incorporation to effect a split of shares of the Company's outstanding common stock at a ratio of 1.818-for-1 (the "Forward Stock Split") effective as of July 15, 2021. The number of authorized shares was increased as a result of the Forward Stock Split, but the par values of the common stock and preferred stock were not adjusted as a result of the Forward Stock Split. All references to common stock, options to purchase common stock, common stock share data, per share data, and related information contained in the financial statements have been retrospectively adjusted to reflect the effect of the Forward Stock Split for all periods presented.

Basis of Presentation and Principles of Consolidation

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP) and include the accounts of Caribou Biosciences, Inc. and its wholly-owned subsidiaries. All intercompany transactions are eliminated in 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, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue, income and expenses during the reporting period. On an ongoing basis, the Company evaluates its estimates and assumptions, including those related to revenue recognition, common stock valuation, stock-based compensation expense, accrued expenses related to research and development activities, valuation of success payments liability and income taxes. Management bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from those estimates.

Segments

The Company operates and manages its business as one reportable and operating segment, which is the business of developing an internal pipeline of off-the-shelf CAR-T and CAR-NK cell therapies. The Company's chief executive officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for allocating and evaluating financial performance. All long-lived assets are maintained in the United States of America.

Cash and Cash Equivalents

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. As of December 31, 2019 and 2020, cash and cash equivalents consisted of cash and money market mutual funds.

Concentrations of Credit Risk and Other Uncertainties

Financial instruments that potentially subject the Company to concentration of credit risk consisted of cash and cash equivalents, accounts receivable, contract assets, other receivables, and investments in equity securities. Substantially all of the Company's cash and cash equivalents are deposited in accounts at one financial institution, and account balances may at times exceed federally insured limits. The Company believes the financial institution to be of high credit quality.

Licensees who represent 10% or more of the Company's revenues and accounts receivable and contract assets are as follows:

	Revenue		Accounts Receivable and Contract Assets	
	Year Ended December 31,		As of December 31,	
	2019	2020	2019	2020
Licensee A	38.9%	*	*	*
Licensee B	26.1%	14.5%	63.7%	40.6%
Licensee C	10.6%	*	*	*
Licensee D, related party	*	60.7%	*	*
Licensee E	*	*	18.0%	13.2%
Licensee F, related party	*	*	*	16.9%
Licensee G	*	*	*	10.1%
Total	75.6%	75.2%	81.7%	80.8%

* Less than 10%

The Company monitors economic conditions to identify facts or circumstances that may indicate that any of its accounts receivable are not collectible and if the contract assets should be impaired. No allowance for doubtful accounts was recorded at December 31, 2019 and 2020.

The Company is subject to certain risks and uncertainties including, but not limited to, changes in any of the following areas that the Company believes could have a material adverse effect on its future financial position or results of operations: availability of future financing; ability to obtain and maintain intellectual property; defending against patent litigation brought by third parties; public perception and acceptance of genome editing; negotiation of future licensing agreements and enforceability of existing contractual obligations; disputes with licensors or licensees; reliance on third parties for manufacturing of product candidates; outcomes of clinical trials; ability to obtain regulatory approval and market acceptance of the Company's product candidates; introduction of competitive products; and the Company's ability to attract and retain qualified employees necessary to support clinical and commercial success.

Revenue Recognition

The Company determines whether agreements are within the scope of ASC 606 or other topics at an agreement's effective date. For agreements that are determined to be within the scope of ASC 606, revenue is recognized when a customer, or licensee, obtains control of promised goods or services (*e.g.*, an intellectual property license). The amount of revenue recognized reflects the consideration that the Company expects to be entitled to receive in exchange for these goods and services. To achieve this core principle, the Company applies the following five steps (i) identify the contract with the customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when or as the Company satisfies a performance obligation.

The Company's revenues are primarily derived through its licensing and/or collaboration agreements. The terms of these types of agreements may include (i) licenses for the Company's technology or programs, (ii) research and development services and (iii) services or obligations in connection with the Company's participation in research or steering committees. Payments to the Company under these arrangements typically include one or more of the following: nonrefundable upfront license fees, maintenance fees, milestones, and other contingent payments to the Company for the achievement of defined collaboration objectives and certain preclinical, clinical, regulatory, and sales-based events, as well as royalties on sales of any commercialized products.

The Company assesses whether the promises in its arrangements with customers are considered distinct performance obligations that should be accounted for separately. Judgment is required to determine whether the license to the Company's intellectual property is distinct from the research and development services or participation on steering committees.

If the license to intellectual property controlled by the Company is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenues allocated to the license at the point in time when the license is transferred to the licensee and the licensee is able to use and benefit from the licenses. For licenses that are combined with other promises, the Company utilizes its judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. The Company evaluates the measure of progress using the input method for each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

The Company's license and/or collaboration agreements may include contingent milestone payments. Such milestone payments are typically payable when the collaboration partner or licensee achieves certain predetermined clinical, regulatory, and/or commercial milestones. Milestone payments that are not within the control of the Company or the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. At each reporting date, the Company re-evaluates whether the

milestones are considered probable of being reached and estimates the amount to be included in the transaction price by using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price in such period of determination.

The Company's collaboration and license agreements may also include contingent payments related to sales-based milestones. Sales-based milestones are typically payable when annual sales of a covered product reach specified levels. Sales-based milestones are recognized at the later of when the associated performance obligation has been satisfied or when the sales occur. Unlike other contingency payments, such as regulatory milestones, sales-based milestones are not included in the transaction price based on estimates at the inception of the contract, but rather, are included when the sales or usage occur. The Company is using the sales-based royalty exception because the license is a predominant item to which sales-based royalties relate.

Certain of the Company's license agreements have two performance obligations: a license and a material right for annual license renewals. Such license agreements require payments of non-refundable annual license fees by the licensee (referred to as maintenance fees in the license agreements), which are accounted for as material rights for license renewals. The Company recognizes revenue when the license is delivered and the term commences. Revenue for the material right for license renewals is recognized at the point in time the annual license fee is paid by the licensee and the renewal period begins.

Customer payments are recorded as deferred revenue upon receipt or when due and may require deferral of revenue recognition to a future period until the Company satisfies its performance obligations under these arrangements. Amounts payable to the Company are recorded as accounts receivable if invoiced or as contract assets, when the Company's right to consideration is unconditional.

Property and Equipment

Property and equipment are recorded at cost, net of accumulated depreciation. Depreciation is recorded using the straight-line method over the estimated useful lives of the assets, generally three to ten years. Leasehold improvements are capitalized and amortized over the shorter period, expected life or lease term. Major replacements and improvements are capitalized, while general repairs and maintenance are expensed as incurred.

Upon retirement or sale of the assets, the cost and related accumulated depreciation and amortization are removed from the consolidated balance sheets and the resulting gain or loss are recorded in the consolidated statements of operations and comprehensive loss.

Impairment of Long-Lived Assets

The Company evaluates the carrying amount of its long-lived assets whenever events or changes in circumstances indicate that the assets may not be recoverable. An impairment loss is recognized when estimated future cash flows expected to result from the use of the asset and its eventual disposition is less than the carrying amount of the asset. To date, there have been no such impairment losses.

Leases

The Company's lease agreements for its laboratory and office facilities are classified as operating leases. Rent expense is recognized on a straight-line basis over the term of the lease. Incentives granted under the Company's facilities leases, including allowances to fund leasehold improvements and rent holidays, are recorded to a deferred rent and lease incentive liability and are recognized as reductions to rental expense on a straight-line basis over the term of the leases.

Lease agreements that contain a bargain purchase option, a full transfer of ownership at the completion of the lease term, a lease term that is at least 75% of the useful lives of the assets or present value of payments in

excess of 90% of fair market value of the leased asset are accounted for as capital leases. The Company capitalizes capital leases in property and equipment and the related amortization of assets under capital leases is included in depreciation and amortization expense in the Company's consolidated statements of operations and comprehensive loss. Initial asset values and lease obligations are based on the present value of future minimum lease payments.

Deferred Issuance Costs

Issuance costs, consisting of legal, accounting, audit and filing fees relating to in-process equity financings, including the Company's proposed initial public offering ("IPO"), are capitalized. Deferred issuance costs are offset against offering proceeds upon the completion of an equity financing or an offering. In the event an equity financing or an offering is terminated or delayed, deferred issuance costs will be expensed immediately as a charge to general and administrative expenses in the consolidated statements of operations and comprehensive loss. As of December 31, 2019 and 2020, the Company did not capitalize any issuance costs.

Convertible Preferred Stock

The Company records convertible preferred stock at fair value on the dates of issuance, net of issuance costs. The convertible preferred stock is recorded outside of stockholders' equity (deficit) because the preferred shares contain liquidation features outside of the Company's control. The Company has elected not to adjust the carrying values of the convertible preferred stock to the liquidation preferences of such shares because it is uncertain whether or when an event would occur that would obligate the Company to pay the liquidation preferences to holders of shares of convertible preferred stock. Subsequent adjustments to the carrying values to the liquidation preferences will be made only when it becomes probable that such a liquidation event will occur.

Research and Development Expenses and Accrued Liabilities

Research and development expenses are charged to expense as incurred. Research and development expenses include certain payroll and personnel expenses; laboratory supplies; consulting costs; external clinical research and development expenses; and allocated overhead, including rent, equipment depreciation and utilities.

The Company records accrued liabilities for estimated costs of its research and development activities conducted by third-party service providers. 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 liabilities in the consolidated balance sheets and within research and development expenses in 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 service agreements established with third parties. If the Company does not identify costs that have begun to be incurred or if it underestimates or overestimates the level of services performed or the costs of these services, actual expenses could differ from our estimates. To date, the Company has not experienced any material differences between accrued costs and actual costs incurred.

The Company makes payments in connection with clinical trials to CMOs that manufacture the material for the Company's product candidates and to clinical research organizations and clinical trial sites that conduct and manage the clinical trials. The financial terms of these contracts are subject to negotiation, which vary by contract and may result in payments that do not match the periods over which materials or services are provided. Generally, these agreements set forth the scope of work to be performed at a fixed fee, unit price or on a time and materials basis. In the event the Company makes advance payments for goods or services that will be used or rendered for future research and development activities, the payments are deferred and capitalized as a prepaid expense and recognized as expense as the goods are received or the related services are rendered. Such payments are evaluated for current or long-term classification based on when they are expected to be realized.

Acquisition of In-Process Research and Development Assets

The Company measures and recognizes acquired in-process research and development assets at cost, including transaction fees, and represents licenses, know-how, and patents at cost. Goodwill is not recognized in asset acquisitions. If acquired in-process technology is determined to not have an alternative future use, the cost is charged to research and development expenses at the acquisition date.

Patent Costs

The Company expenses costs for filing, prosecuting, and maintaining patents and patent applications, including certain of the patents and patent applications that the Company licenses from third parties, as incurred and classifies such costs as general and administrative expenses in the consolidated statements of operations and comprehensive loss. In addition, the Company is entitled to receive reimbursement of a portion of the prosecution and maintenance costs for certain patents and patent applications from third parties. The Company accrues for these reimbursements as the respective expenses are incurred and classifies such reimbursements as a reduction of general and administrative expenses. During the years ended December 31, 2019 and 2020, the Company incurred gross patent costs of $8.5 million and $11.2 million, respectively. During the years ended December 31, 2019 and 2020, the Company recorded $4.4 million and $5.8 million, respectively, of patent reimbursements as a credit to general and administrative expense.

Other Income

The Company recognizes fees earned from sources not considered to be within the normal course of business in other income within the consolidated statements of operations and comprehensive loss. During the year ended December 31, 2020, the Company recognized $0.5 million of fees related to the Company's sale and assignment of patents and patent applications, which is not an ordinary business activity.

Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. 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. Refer to Note 3, *Fair Value Measurements and Fair Value of Financial Instruments*, for the methodologies and assumptions used in valuing financial instruments.

Success Payments Liability

Under the terms of the Company's Exclusive License Agreement with Memorial Sloan Kettering Cancer Center ("MSKCC") (Note 4), the Company may be required to make success payments and a change of control payment if its stock price increases by certain multiples of increasing value based on a comparison of the fair market value of its common stock upon such transaction with $5.1914 per share, the split-adjusted initial price at which the Company's Series B convertible preferred stock was sold, adjusted for any future stock splits, during a specified time period. The success payments liability is accounted for under ASC 815, *Derivatives and Hedging*. The nature of the success payments liability is contingent consideration for the MSKCC exclusive license and, as such, it is accounted for as research and development expenses. The success payments liability is estimated at fair value at inception, and at each subsequent balance sheet date, and changes in the fair value of the success payments liability are included in operating expenses in the Company's consolidated statements of operations and comprehensive loss.

To determine the estimated fair value of the success payments liability, the Company uses a Monte Carlo simulation methodology which models the future movement of stock prices based on several key variables. The following variables were incorporated in the estimated fair value of the success payments liability: estimated

term of the success payments, fair value of common stock, expected volatility, risk-free interest rate, and estimated number and timing of valuation measurement dates on the basis of which payments may be triggered. The computation of expected volatility was estimated using a combination of available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption and its historical and projected volatility. There are several valuation measurement dates subsequent to an IPO, on the basis of which payments may be triggered (Note 4).

Investments in Equity Securities

The Company invests in, or receives as consideration for revenue contracts with customers, equity securities of private or public companies. If the Company determines that it has control over these companies, it consolidates the financial statements of the investees. If the Company determines that it does have control over these investees under either the VIE or voting models, it then determines if it has an ability to exercise significant influence via voting interests, board representation or other business relationships. If the Company concludes that it does not have an ability to exercise significant influence over an investee, it accounts for its investment at fair value and may elect to account for an equity security without a readily determinable fair value using a measurement alternative. This measurement alternative allows the Company to measure the equity investment at its cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer.

The investment in equity securities, included in the current assets, consisted of common stock shares of Intellia Therapeutics, Inc. (“Intellia”) as of December 31, 2019. Intellia shares are publicly traded and are accounted for at fair value, which is Intellia’s closing price of common stock on Nasdaq at the end of each reporting period. The Company recognized changes in fair value of equity securities in other income (expense) in its consolidated statements of operations and comprehensive loss until the securities were sold. The Company sold Intellia shares during 2019 and 2020 for $28.1 million and $7.7 million of cash proceeds, respectively, and recognized change in fair value of equity securities of $2.3 million and $0.7 million, respectively, in its consolidated statements of operations and comprehensive loss, respectively.

Investments in equity securities, long-term, consisted primarily of the Company’s investment in the preferred stock of a private company, a related party (Note 7). The Company concluded that its shares of the private company’s preferred stock are not in substance common stock and, since these securities do not have readily determinable fair value, the Company accounts for its investment in the private company’s preferred stock using the alternative measurement method.

The Company recorded $0.6 million as other receivables relating to securities sold that had not been settled in cash as of December 31, 2019. No such receivable was recorded as of December 31, 2020.

Stock-Based Compensation Expense

Stock-based compensation expense related to awards to employees is measured at the grant date based on the fair value of the award. The fair value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the requisite service period of the awards, which is generally the vesting period, and is adjusted for pre-vesting forfeitures in the period in which the forfeitures occur.

The Company uses the Black-Scholes valuation model as the method for determining the estimated fair value of stock-based awards.

Fair Value of Common Stock

The fair value of the Company’s common stock is determined by the Board of Directors with assistance from management and external valuation experts. The Company’s approach to estimate the fair value of the

Company's common stock is consistent with the methods outlined in the American Institute of Certified Public Accountants' Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*.

Expected Term

Expected term represents the period that the Company's stock-based awards are expected to be outstanding and is determined using the simplified method.

Expected Volatility

Expected volatility is estimated by studying the volatility of comparable public companies for similar terms.

Expected Dividend

The Black-Scholes valuation model calls for a single expected dividend yield as an input. To date, the Company has not declared or paid any dividends.

Risk-Free Interest Rate

The risk-free interest rate is based on the U.S. Treasury zero-coupon issued in effect at the time of grant for periods corresponding with the expected term of the option.

Stock-based compensation expense related to awards to non-employees, such as consultants, is recognized based on the then-current fair value at each grant date over the associated service period of the award, which is generally the vesting term, using the straight-line method. The fair value of non-employee stock options is estimated using the Black-Scholes valuation model with assumptions generally consistent with those used for employee stock options, with the exception of the expected term, which is the remaining contractual life at each measurement date.

Income Taxes

The Company accounts for income taxes using the asset and liability method. The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Tax benefits related to uncertain tax positions are recognized when it is more likely than not that a tax position will be sustained during an audit. Interest and penalties related to unrecognized tax benefits are included within the provision for income tax.

Comprehensive Loss

Comprehensive loss includes all changes in equity (net assets) during a period from non-owner sources. There have been no items qualifying as other comprehensive loss and, therefore, for all periods presented, the Company's comprehensive loss was the same as its reported net loss.

Net Loss Per Share

The Company calculates basic and diluted net loss per share using the two-class method since the Company has participating securities. Under the two-class method, basic net loss per share is computed by

dividing the net loss by the weighted average number of common shares outstanding during the period, without consideration of potential dilutive securities. Diluted net loss per share is computed by dividing the net loss by the sum of the weighted average number of common shares outstanding during the period plus the dilutive effects of potentially dilutive securities outstanding during the period. Potentially dilutive securities include convertible preferred shares, common stock options, and common shares subject to nonrecourse notes. For all periods presented, diluted net loss per share is the same as basic net loss per share since the effect of including potential common shares is anti-dilutive.

Emerging Growth Company

The Company is an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. The Company has elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that it (i) is no longer an emerging growth company or (ii) affirmatively and irrevocably opts out of the extended transition period provided in the JOBS Act. As a result, these consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

As described in "New Adopted Accounting Pronouncements" below, the Company early adopted multiple accounting standards, as the JOBS Act does not preclude an emerging growth company from adopting a new or revised accounting standard earlier than the time that such standard applies to private companies to the extent early adoption is allowed by the accounting standard. The Company expects to use the extended transition period for any other new or revised accounting standards during the period in which it remains an emerging growth company.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (FASB) or other standard-setting bodies and adopted by the Company as of the specified effective date.

Newly Adopted Accounting Pronouncements

In May 2014, the FASB issued ASC 606, which superseded existing revenue recognition guidance. ASC 606's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. The Company adopted ASC 606 effective on January 1, 2019 using the modified retrospective method. The cumulative effect of applying the new guidance to all contracts that were not completed as of January 1, 2019 was recorded as an adjustment to retained earnings as of the adoption date. As a result of applying the modified retrospective method to adopt the new guidance, the following adjustments were made to accounts on the consolidated balance sheets as of January 1, 2019 (in thousands):

	January 1, 2019		
	Pre-Adoption	ASC 606 Adjustment	Post-Adoption
Current portion of deferred revenue	$ —	$ 66	$ 66
Deferred revenue, net of current portion	1,844	591	2,435
Deferred tax liabilities	7,916	(152)	7,764
Retained earnings	27,372	(505)	26,867

Under ASC 605, the Company accounted for certain upfront payments for licenses with renewal options at a point in time upon delivery of a license to the customer. Under ASC 606, the Company determined that the

renewal options for certain customers constitute a material right and, therefore, deferred and amortized upfront payments over the expected renewal term. The amounts within the Company's consolidated statements of operations and comprehensive loss have been revised in the table below to provide a comparison of revenue to the Company's consolidated statements of operations and comprehensive loss for the year ended December 31, 2019 (in thousands):

	Year Ended December 31, 2019 Impact of changes in accounting policies		
	Pre-Adoption	ASC 606 Adjustment	Post-Adoption
Current portion of deferred revenue	$ 594	$ 123	$ 717
Deferred revenue, net of current portion	—	986	986
Deferred tax liabilities	542	108	650
Retained earnings	3,799	(362)	3,437
Licensing and collaboration revenue	6,259	(471)	5,788
Benefit from income taxes	(7,429)	(108)	(7,537)

Effective January 1, 2019, the Company adopted ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*. This ASU affects entities that issue share-based payment awards to their employees. The ASU is designed to simplify several aspects of accounting for share-based payment award transactions that include the income tax consequences, classification of awards as either equity or liabilities, classification on the statements of cash flows and forfeiture rate calculations. As the Company did not have any significant share-based compensation at the time of adoption, the adoption did not have a material impact on its consolidated financial statements.

In June 2018, the FASB issued ASU 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Non-employee Share-Based Payment Accounting*. The updated guidance expands the scope of *Topic 718, Compensation—Stock Compensation* (which currently includes only share-based payments to employees) to include share-based payments issued to non-employees for goods or services. Consequently, the accounting for share-based payments to non-employees and employees will be substantially aligned. ASU 2018-07 supersedes *Subtopic 505-50, Equity—Equity-Based Payments to Non-Employees*. This standard is effective for fiscal years beginning after December 15, 2018, including interim periods within that fiscal year. The Company's adoption of the new standard on January 1, 2019 did not have a material effect on the Company's consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement—Disclosure Framework (Topic 820)*. The updated guidance requires entities to disclose changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements and the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. Amendments in this guidance also require disclosure of transfers into and out of Level 3 of the fair value hierarchy, purchases and issues of Level 3 assets and liabilities, and clarify that the measurement uncertainty disclosure is as of the reporting date. The guidance removes requirements to disclose the amounts and reasons for transfers between Level 1 and Level 2, policy for timing between of transfers between levels, and the valuation processes for Level 3 fair value measurements. The Company has prepared its disclosures for the 2019 and 2020 fiscal years in accordance with this ASU.

Effective January 1, 2019, the Company adopted ASU 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606*. This ASU clarifies certain transactions between collaborative arrangement participants should be accounted for as revenue when the collaborative arrangement participant is a customer in the context of a unit of account and precludes recognizing as revenue consideration received from a collaborative arrangement participant if the participant is not a customer. The adoption did not have an impact on its consolidated financial statements.

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"). The updated guidance in ASU 2019-12 is effective for fiscal years beginning after December 15, 2021, including interim periods therein. Early adoption of the standard is permitted. Effective January 1, 2019, the Company adopted ASU 2019-12, which did not have a material impact to the Company's consolidated financial statements.

New Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. This ASU requires a lessee to recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-to-use asset representing its right to use the underlying asset for the lease term. The Company may elect not to apply Topic 842 to short-term leases with a term of 12 months or less. This ASU is effective for the Company's fiscal years beginning after December 15, 2021 and interim periods within fiscal years beginning after December 15, 2022, with early adoption permitted. The Company is currently evaluating the impact of adoption of this update on its consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments (Topic 326)*. The update provides guidance on the measurement of credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. The updated guidance replaces the current incurred loss impairment approach with a methodology to reflect expected credit losses and requires consideration of a broader range of reasonable and supportable information to explain credit loss estimates. This ASU is to be applied on a modified retrospective approach and is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2022, and interim reporting periods within beginning after December 15, 2023. Early adoption is permitted for all entities for fiscal years beginning after December 15, 2018, and interim periods therein. The Company is currently evaluating the impact of adoption of this update on its consolidated financial statements.

3. Fair Value Measurements and Fair Value of Financial Instruments

The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

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

Level 2—Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

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

Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and consider factors specific to the asset or liability.

The Company's financial instruments consisted of Level 1 and Level 3. Level 1 financial instruments are comprised of investment in equity securities in shares of Intellia common stock and money market mutual funds. Level 3 financial instruments are comprised of success payments liability related to the MSKCC Agreement.

The following table sets forth the Company's financial instruments that were measured at fair value on a recurring basis by level within the fair value hierarchy (in thousands):

	Fair Value Measurements at December 31, 2019			
	Total	Level 1	Level 2	Level 3
Assets:				
Cash and cash equivalents	$ 41,070	$ 41,070	$ —	$ —
Investments in equity securities	8,401	8,401	—	—
Total	$ 49,471	$ 49,471	$ —	$ —

	Fair Value Measurements at December 31, 2020			
	Total	Level 1	Level 2	Level 3
Assets:				
Cash and cash equivalents	$ 15,953	$ 15,953	$ —	$ —
Total	$ 15,953	$ 15,953	$ —	$ —
Liabilities:				
Success payments liability	$ 2,654	$ —	$ —	$ 2,654
Total	$ 2,654	$ —	$ —	$ 2,654

The following table sets forth a summary of the changes in the fair value of the Company's Level 3 financial liability (in thousands):

	Success Payments Liability
Balance at December 31, 2019	$ —
Issuance	2,654
Change in fair value	—
Balance at December 31, 2020	$ 2,654

The fair value of the MSKCC success payments liability at issuance date was $2.7 million and the change in fair value from issuance date to December 31, 2020 was not material to Company's consolidated financial statements.

The initial recognition of $2.7 million of the success payments liability is recorded within the research and development expense caption in the consolidated statement of operations and comprehensive loss during the year ended December 31, 2020.

The Company utilizes a Monte Carlo simulation model that requires significant estimates and assumptions in determining the estimated MSKCC success payments liability and associated expense at each balance sheet date. The assumptions used to calculate the fair value of the success payments are subject to a significant amount of judgment including the expected volatility, estimated term, and estimated number and timing of valuation measurement dates.

The Company's liability for success payments under the MSKCC Agreement is carried at fair value and changes are recognized as expense until the success payments liability is paid or expires (Note 4). To determine the estimated fair value of the success payments liability, the Company uses a Monte Carlo simulation methodology which models the future movement of stock prices based on several key variables. The table below summarizes key assumptions used in the valuation of success payments liability.

	During the Year Ended December 31, 2020
Fair value of common stock	$ 5.462
Risk free interest rate	0.93%
Expected volatility	80%
Probability	4.4% to 13.4%
Expected term (years)	4.7 to 5.7

The computation of expected volatility was estimated using a combination of available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption and the Company's historical and implied volatility. The risk-free interest rate, expected volatility, and expected term assumptions depend on the estimated timing of the Company's Phase 1 clinical trials and FDA approval of a future product candidate. In addition, the Company incorporated the estimated number and timing of valuation measurement dates in the calculation of the success payments liability.

A small change in the assumptions and other inputs, such as the fair value of the Company's common stock, may have a relatively large change in the estimated valuation and associated liability and expense.

The carrying value of the promissory note approximates its fair value (see Note 8).

4. Significant Agreements

The Regents of the University of California/University of Vienna

The Company entered into an Exclusive License Agreement, dated April 16, 2013, as amended (the "UC/Vienna Agreement") with The Regents of the University of California ("UC") and the University of Vienna ("Vienna") (together, "UC/Vienna") wherein UC/Vienna granted the Company an exclusive worldwide license, with the right to sublicense, in all fields to the foundational CRISPR-Cas9 patent family co-owned by UC, Vienna, and Dr. Emmanuelle Charpentier (the "CVC IP"). Dr. Charpentier has not granted the Company any rights, either directly or indirectly. The UC/Vienna Agreement continues until the last-to-expire patent or last-to-be-abandoned patent application licensed under the UC/Vienna Agreement; provided, however, that UC/Vienna may terminate the UC/Vienna Agreement upon the occurrence of certain events and the Company may terminate the UC/Vienna Agreement at its sole discretion upon written notice. Without patent term adjustment or patent term extension, the CVC IP will expire in 2033. For products and services sold by the Company covered by the intellectual property licensed under the UC/Vienna Agreement, the Company will owe low to mid-single-digit percent royalties on net sales, subject to a minimum annual royalty. The Company owes UC/Vienna a specified percentage of sublicensing revenue it receives, including cash and equity, under the Company's sublicensing agreements, subject to certain exceptions. If the Company includes intellectual property owned or controlled by it in such sublicense, the Company pays UC/Vienna a low-double-digit percentage of sublicensing revenues. If the Company does not include intellectual property owned or controlled by the Company in such sublicense, the Company pays UC/Vienna 50% of sublicensing revenues. In addition, up to $3.4 million in certain regulatory and clinical milestones may be payable by the Company under the UC/Vienna Agreement in the field of human therapeutics.

For the years ended December 31, 2019 and 2020, the Company paid UC/Vienna $0.8 million in sublicensing fees, which was recorded in research and development expenses in the consolidated statements of operations and comprehensive loss.

The Company is obligated to reimburse UC for prosecution and maintenance costs of the CVC IP. For the years ended December 31, 2019 and 2020, the Company reimbursed UC $6.7 million and $9.2 million, respectively, which were recorded in general and administrative expenses in the consolidated statements of operations and comprehensive loss.

On December 15, 2016, the Company entered into a Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement ("IMA") relating to the CVC IP. Under the IMA, CRISPR Therapeutics AG reimburses the Company 50% of the amounts the Company reimburses UC for patent prosecution and maintenance costs. For the years ended December 31, 2019 and 2020, CRISPR Therapeutics AG reimbursed the Company $3.1 million and $4.2 million, respectively, which was recorded as a reduction of general and administrative expenses in the consolidated statements of operations and comprehensive loss.

Intellia Therapeutics, Inc.

On July 16, 2014, the Company entered into a License Agreement, as amended ("Intellia License Agreement") and a Services Agreement ("Intellia Services Agreement") with Intellia, LLC, to which Intellia is a successor in interest. Under the Intellia License Agreement, the Company granted Intellia an exclusive worldwide license, with the right to sublicense, to certain CRISPR-Cas9 technology for a defined field of human therapeutics. Intellia granted the Company an exclusive worldwide license, with the right to sublicense, to its CRISPR-Cas9 technology for all fields outside of the defined field of human therapeutics, including a license to certain of Intellia's future CRISPR-Cas9 intellectual property until the Company's direct or indirect ownership percentage dropped below 10% (the "IP cut-off date"). Each party had the right to opt-in to any licenses in its field of use entered into by the other party prior to the IP cut-off date, subject to the terms and conditions of such license. The IP cut-off date occurred on January 30, 2018. Under the Intellia License Agreement, each party is responsible for 30% of the other party's expenses for prosecution and maintenance of the licensed intellectual property. For the years ended December 31, 2019 and 2020, the Company reimbursed Intellia $0.1 million, which was recorded as general and administrative expenses in the consolidated statements of operations and comprehensive loss. During the years ended December 31, 2019 and 2020, Intellia reimbursed the Company $1.2 million and $1.5 million, respectively (including reimbursement for a portion of the patent prosecution and maintenance costs of the CVC IP paid to UC), which was recorded as a reduction of general and administrative expenses in the consolidated statements of operations and comprehensive loss. The term of the Intellia License Agreement continues for the life of the licensed patents and patent applications; provided, however, that either party may terminate upon the occurrence of certain events.

Pioneer Hi-Bred International, Inc. (now Corteva Agriscience)

On July 13, 2015, the Company and Pioneer Hi-Bred International, Inc. ("Pioneer") (now Corteva Agriscience), then a DuPont company ("DuPont"), entered into an Amended and Restated Collaboration and License Agreement, as amended (the "Pioneer Agreement"). Under the terms of the Pioneer Agreement, the Company and Pioneer cross-licensed CRISPR intellectual property portfolios. Pioneer granted the Company an exclusive worldwide license, with the right to sublicense, to its CRISPR intellectual property in the field of research tools, as well as a non-exclusive worldwide license to such intellectual property in human and animal therapeutics, industrial biotechnology, certain agriculture segments, and other fields; and the Company granted Pioneer an exclusive worldwide license, with the right to sublicense, to its CRISPR intellectual property in a defined field of agriculture relating to specified row crops, as well as a non-exclusive worldwide license to such intellectual property in other agricultural applications, industrial biotechnology, nutrition and health and other fields. The Pioneer Agreement continues until the expiration, abandonment or invalidation of the last patent or patent application within the licensed intellectual property; provided, however, that the parties may terminate the Pioneer Agreement by mutual consent or either party may unilaterally terminate the Pioneer Agreement in the event of an uncured breach of a payment obligation, bankruptcy, or failure to maintain or own licensed intellectual property by the other party in the event the non-breaching party is materially adversely affected by such failure. The Company is obligated to pay low-single-digit percent royalties to Pioneer for the sales of the

Company's products in the research tools field as well as certain sublicensing revenue in that field. The Company is eligible to receive milestone payments from Pioneer in the event certain regulatory and commercial milestones are met, for a total of up to $22.4 million, related to specified row crops as well as receiving low-single-digit percent royalties for sales of defined agricultural products and certain sublicensing revenue in that field.

Under the Pioneer Agreement, the Company and Pioneer also entered into a three-year collaboration, funded by Pioneer, which ended in 2016. Initially, Pioneer owned the patents and patent applications developed under the collaboration and granted the Company an exclusive license thereto in the fields of research tools and therapeutics. Each party paid 50% of the costs of such patents and patent applications and, for the years ended December 31, 2019 and 2020, the Company spent $0.1 million for filing, prosecuting, and maintaining collaboration intellectual property.

In December 2020, the Company and Pioneer entered into an amendment to the Pioneer Agreement under which Pioneer assigned to the Company the chRDNA patent family developed under the research collaboration, and the Company paid Pioneer an upfront payment of $0.5 million. The Company considered the payment to Pioneer in accordance with revenue recognition guidance and accounted for it as a reduction of the licensing and collaboration revenue within the consolidated statements of operations and comprehensive loss. Following this assignment, the Company is responsible for 100% of the costs of such patents and patent applications.

DuPont made equity investments at fair market value in the Company as part of the Company's Series A, A-1, and B convertible preferred stock financings.

Genus plc

On May 12, 2016, the Company entered into a Research Collaboration and License Agreement, as amended (the "Genus Agreement") with Genus plc ("Genus") under which the Company granted Genus an exclusive worldwide license to certain CRISPR-Cas9 technology for the introduction of genetic traits into cattle and pigs raised to produce protein primarily for human consumption; provided, however, that at the end of the four-year research collaboration, Genus was required to select a specified number of licensed products and the license is limited to those particular products. The Genus Agreement continues until the expiration, abandonment, or invalidation of the last patent or patent application within the licensed patent rights; provided, however, that each party may terminate the Genus Agreement upon the occurrence of certain events, and Genus may terminate the Genus Agreement at its sole discretion upon written notice. In addition to an upfront payment received, the Company is eligible to receive milestone payments from Genus in the event certain regulatory and commercial milestones are met, for a total of $10.0 million. The Company will also be eligible to receive either low- to mid-single-digit royalties or low-single to low-double-digit royalties on net sales of licensed products.

The Company and Genus entered into a four-year research collaboration, which was funded by Genus. The collaboration ended in May 2020. During the years ended December 31, 2019 and 2020, the Company recognized revenue of $2.3 million and $0.8 million related to the Genus Agreement, respectively.

Genus made an equity investment in the Company's Series B convertible preferred stock at fair market value.

Private Company License Agreement

On May 15, 2020, the Company entered into an Exclusive License Agreement, as amended, with a related party private company ("Private Company License Agreement"), under which the Company granted the private company an exclusive worldwide license under certain intellectual property rights and know-how in a defined field. See Note 7 for more details.

The Company is eligible to receive milestone payments for licensed products following the first commercial sale of each such licensed product in each of the United States and the first European country in

which each such licensed product is sold by the private company. The private company may select one of several milestone payment amounts for each licensed product, which then dictates the applicable royalty rate for net sales of licensed products. The Company is also eligible to receive a percentage of sublicensing revenues earned by the private company.

The Private Company License Agreement will continue in force and effect until the expiration, abandonment or invalidation of the last patent or patent application within the licensed patent rights. The Private Company License Agreement may be terminated during the term by either party for an uncured material breach or bankruptcy. Additionally, the private company may terminate the Private Company License Agreement upon 90 days' written notice to the Company.

As consideration for the exclusive license, the private company issued to the Company 7,500,000 shares of convertible preferred stock with an estimated fair value of $7.5 million, which was the price paid for similar shares by another investor, and was an arm's length transaction. The Company accounted for the grant of license as a contract with a customer under ASC 606 and recognized $7.5 million as license and collaboration revenue in its consolidated statements of operations and comprehensive loss for the year ended December 31, 2020.

On May 15, 2020, the Company entered into a separate option agreement under which it granted the private company a three-year option to negotiate an exclusive, royalty-bearing, worldwide license in a defined field to certain CRISPR-Cas9 patent rights controlled by the Company. The Company received a $50,000 upfront option payment and may receive annual option fees and an option exercise fee. The Company recorded the upfront payment received in long term deferred revenue in the consolidated balance sheet as of December 31, 2020.

Memorial Sloan Kettering Cancer Center

On November 13, 2020, the Company entered into an Exclusive License Agreement with MSKCC ("the MSKCC Agreement") under which the Company exclusively licensed know-how, biological materials, and related intellectual property relating to humanized single-chain variable fragments (scFvs) targeting CD371 for use in T cells, natural killer (NK) cells, and induced pluripotent stem cell (iPSC)-derived cells for allogeneic CD371-targeted cell therapy (the Company's CB-012 product candidate). The Company paid an upfront payment of $0.5 million in cash and $2.1 million in stock. For each licensed product, there are potential clinical, regulatory, and commercial milestones totaling $112.0 million and, in the event the Company, or Company's affiliates or sublicensees, receive regulatory approval for CB-012, the Company will owe low- to mid-single-digit royalties on net sales by the Company, its affiliates and its sublicensees. The Company's license includes the right to sublicense through multiple tiers and the Company will owe MSKCC a percentage of upfront cash or equity received from the Company's sublicensees. The percentage owed decreases as the Company's products move through development, starting at a low-double-digit percentage if clinical trials have not yet begun and decreasing to a mid-single-digit percentage if the product is in later clinical trial stages. The Company is also responsible for a percentage of licensed patent costs. The MSKCC Agreement includes certain diligence milestones that the Company must meet, which may be extended upon payment of additional fees.

MSKCC is entitled to certain success payments in the event that the Company's common stock fair value increases by certain multiples of increasing value based on a comparison of the fair market value of the Company's common stock compared with the split-adjusted initial stock price of the Company's Series B convertible preferred stock financing of $5.1914, as adjusted for any future stock splits, during a specified time interval. Under the MSKCC Agreement, as a publicly traded company, the Company's common stock fair value is determined by any given 45-day VWAP (volume weight average trading price). At the Company's option, payments may be made in cash or common stock. The relevant time interval commences when the first patient is dosed with the Company's CB-012 product candidate in the first phase 1 clinical trial and ends upon the earlier of the third anniversary of approval of the Company's BLA by the FDA or 10 years from the date the first patient was dosed with CB-012 in the first phase 1 clinical trial. The aggregate success payments are not to exceed $35.0 million. Additionally, if the Company undergoes a change of control during the time period, a change of

control payment may be owed, depending upon the increase in the Company's stock price due to the change of control and also to what extent success payments have already been paid. In no event will the combination of success payments and the change of control payment exceed $35.0 million.

The following table summarizes MSKCC success payments amounts:

Multiple of initial share price at issuance	5x	10x	15x
Success payment(s) (in millions)	$10.0	$10.0	$15.0

The Company may terminate the MSKCC Agreement upon 90 calendar days' prior written notice. MSKCC may terminate in the event of the Company's uncured material breach, bankruptcy, or criminal activity. In the event that MSKCC materially breaches the MSKCC Agreement in certain circumstances (*e.g.*, granting a third party a license in the Company's field), then during the time of such uncured breach, MSKCC is not entitled to receive any success payments or any change of control payment.

As of December 31, 2020, the estimated fair value of the total success payments obligation to MSKCC was $2.7 million, which was included in the consolidated balance sheet as of December 31, 2020 and recognized within research and development expense in the consolidated statement of operations and comprehensive loss upon issuance of the success payments liability during the year ended December 31, 2020. The change in fair value of success payments from issuance to December 31, 2020 was *de minimis*.

5. Revenue

Disaggregation of Revenue

The Company disaggregates revenue by geographical market based on the licensing and collaboration partners' location of research and development activities. The following is a summary of revenue by geographic location for the year ended December 31, 2019 and 2020 (in thousands):

	2019	2020
United States	$5,348	$12,003
Rest of world	439	358
Total	$5,787	$12,361

During the year ended December 31, 2019, the Company recognized $2.3 million of revenue related to performance obligations satisfied over time and $3.5 million of revenue related to performance obligations satisfied at a point in time. During the year ended December 31, 2020, the Company recognized $0.8 million of revenue related to performance obligations satisfied over time and $11.6 million of revenue related to performance obligations satisfied at a point in time.

Contract Balances

Accounts receivable relate to the Company's right to consideration for performance obligations completed (or partially completed) for which the Company has an unconditional right to consideration. The Company's accounts receivable balances represent amounts that are billed to licensees with invoices outstanding as of the period end.

Contract assets are rights to consideration in exchange for license and maintenance fees that the Company has transferred to a customer when such right is conditional on something other than the passage of time. The Company's contract asset balances represent royalties and milestones that are unbilled as of the period end.

Contract liabilities consist of deferred revenue and relate to amounts invoiced to or advance consideration received from customers, which precede the Company's satisfaction of the associated performance

obligation(s). The Company's deferred revenue primarily results from upfront payments received under license agreements that also include non-refundable annual license fees, which are accounted for as material rights for license renewals and are recognized at the point in time the annual license fee is paid by the licensee and the renewal period begins.

The following table presents changes in the Company's contract assets and liabilities during the year ended December 31, 2019 (in thousands):

	Balance at Beginning of Period	Additions	Deductions	Balance at End of Period
Accounts receivable	$ 542	$ 4,152	$ (4,689)	$ 5
Contract assets:				
Unbilled accounts receivable	$ 80	$ 836	$ (80)	$ 836
Contract liabilities:				
Deferred revenue, current and long-term	$ 1,844	$ 2,707	$ (2,848)	$ 1,703

The following table presents changes in the Company's contract assets and liabilities during the year ended December 31, 2020 (in thousands):

	Balance at Beginning of Period	Additions	Deductions	Balance at End of Period
Accounts receivable	$ 5	$ 4,650	$ (4,505)	$ 150
Contract assets:				
Unbilled accounts receivable	$ 836	$ 1,328	$ (836)	$ 1,328
Contract liabilities:				
Deferred revenue, current and long-term	$ 1,703	$ 1,425	$ (2,030)	$ 1,098

Unbilled accounts receivable increased during the year ended December 31, 2020 primarily due Company's right to consideration related to earned royalties not billed as of December 31, 2020.

Deferred revenue decreased during the year ended December 31, 2020 because the recognition of revenue from contracts entered into in prior periods exceeded the value of the transaction price allocated to performance obligations during the current period.

During the years ended December 31, 2019 and 2020, the Company recognized $1.8 million and $0.7 million of revenues that were included in the opening contract liabilities balance, respectively.

Transaction Prices Allocated to the Remaining Performance Obligations

Remaining unsatisfied performance obligations represent in aggregate the amount of a transaction price that has been allocated to performance obligations not delivered, or only partially undelivered, as of the end of the reporting period. The value of transaction prices allocated to remaining unsatisfied performance obligations as of December 31, 2020 was approximately $1.1 million. The Company expects to recognize approximately $0.2 million of remaining performance obligations as revenue in the next 12 months, and the remainder thereafter.

Capitalized Contract Acquisition Costs and Fulfillment Cost

The Company did not incur any expenses to obtain license and collaboration agreements and costs to fulfill those contracts do not generate or enhance resources of the Company. As such, no costs to obtain or fulfill a contract have been capitalized in any period.

6. Balance Sheet Items

Other receivables consisted of the following at December 31 (in thousands):

	2019	2020
Patent cost reimbursements	$2,565	$3,672
Other	576	10
Total	$3,141	$3,682

Prepaid expenses and other current assets consisted of the following at December 31 (in thousands):

	2019	2020
Prepaid income taxes	$2,037	$1,479
Prepaid contract manufacturing costs	1,145	954
Other	373	760
Total	$3,555	$3,193

Property and equipment, net, consisted of the following at December 31 (in thousands):

	2019	2020
Furniture and equipment	$ 117	$ 117
Computer equipment	261	263
Lab equipment	5,067	5,038
Leasehold improvements	1,145	1,180
	6,590	6,598
Less: accumulated depreciation and amortization	(2,258)	(3,096)
Property and equipment, net	$ 4,332	$ 3,502

Depreciation and amortization expense related to property and equipment was $0.8 million and $0.9 million for the years ended December 31, 2019 and 2020, respectively.

Accrued expenses and other current liabilities consisted of the following at December 31 (in thousands):

	2019	2020
Accrued patent expenses	$4,188	$5,087
Income taxes payable	11	5
Accrued sublicensing fees	475	402
Accrued employee compensation and related expenses	400	2,081
Accrued research and development expenses	590	581
Credit card liability	532	193
Other	628	624
Total	$6,824	$8,973

7. Related Party Transactions

Private Company Investment and Exclusive License Agreement

On May 15, 2020, the Company received 7,500,000 shares of convertible preferred stock with an estimated fair value of $7.5 million as consideration for the Private Company License Agreement (Note 4). This represents a material voting interest in the private company and entitles the Company to hold one out of the three private company's board of director seats. The Company concluded that the private company is a variable interest entity and that the Company is not its primary beneficiary, based on the Company's representation on the private company's board of directors. As the private company's convertible preferred stock is not in substance common stock, the Company records this investment using the measurement alternative in accordance with ASC 321. Under the measurement alternative, the Company's investment in the private company's convertible preferred stock is initially recorded at its estimated fair value, but the carrying value may be adjusted through earnings upon an impairment or when there is an observable price change involving the same or a similar investment with the private company. As of December 31, 2020, there were no changes to the carrying value of the investment (see Note 4).

Amended and Restated Collaboration and License Agreement with Pioneer

As of December 31, 2019 and 2020, DuPont held more than 10% of voting interest in the Company and Pioneer is, therefore, considered a related party.

In accordance with the Pioneer Agreement (Note 4), Pioneer met a certain commercial milestone in December 2020, and as a result, the Company recognized $0.3 million of milestone revenues from Pioneer during the year ended December 31, 2020. The Company did not have any revenue from Pioneer during the year ended December 31, 2019. In December 2020, the Company entered into an amendment to the Pioneer Agreement under which Pioneer assigned to the Company the chRDNA patent family developed under the research collaboration, and the Company paid an upfront payment of $0.5 million (see Note 4).

Scientific Advisory Board Payments

Dr. Doudna, a co-founder and significant shareholder of the Company, receive compensation for participating on the Company's SAB. During the years ended December 31, 2019 and 2020, the Company paid Dr. Doudna less than $0.1 million for her participation on the SAB.

Officer Promissory Note

In November 2018, the Company's President and Chief Executive Officer entered into a promissory note with the Company for $1.1 million, as a means to provide liquidity without triggering a taxable event. The note bears interest at a rate of 3.04%, compounded annually, and is payable in five years, together with principal and accrued interest. The promissory note is secured by 409,795 shares of Caribou common stock owned by the President and Chief Executive Officer and has been determined to be non-recourse for accounting purposes and, as such, the issuance of the promissory note is effectively the grant of a new share option. A one-time stock compensation charge of $0.7 million was recorded as general and administrative expenses during the year ended December 31, 2018. The promissory note was still outstanding as of December 31, 2019 and 2020.

8. Promissory Note

On May 6, 2020, the Company entered into a promissory note with WebBank (the "Lender") pursuant to the Paycheck Protection Program ("PPP") administered by the Small Business Administration ("SBA") under the Coronavirus Aid, Relief and Economic Security Act ("CARES Act") for a total amount of $1.6 million ("PPP Loan").

The PPP Loan has a two-year term and bears interest at a stated rate of 1.0% per annum, accrued monthly, beginning on the date the PPP Loan is issued by the Lender. Monthly principal and interest payments, less the amount of any potential forgiveness, will commence on the monthly payment date after which the SBA has notified the Lender of the forgiveness determination or, in the case of Lender's determination, beginning on the monthly payment date after the period for which the Company's right to request SBA review of such determination has lapsed on which a forgiveness decision is received from the Lender.

The Company did not provide any collateral or guarantees for the PPP Loan, nor did the Company pay any facility charge to obtain the PPP Loan. The PPP Loan provides for customary events of default, including, among others, those relating to failure to make payment, bankruptcy, breaches of representations and material adverse effects. The Company may prepay the principal of the PPP Loan at any time without incurring any prepayment charges.

The PPP Loan may be partially or fully forgiven if the Company complies with the provisions of the CARES Act including the use of PPP Loan proceeds for payroll costs, rent, utilities and certain other expenses, and at least 60% of the PPP Loan proceeds must be used for payroll costs as defined by the CARES Act. Any forgiveness of the PPP Loan will be subject to approval by the SBA and the Lender will require the Company to apply for such forgiveness in the future.

In December 2020, the Company applied for forgiveness of the PPP Loan and has not received a decision as of the date these consolidated financial statements were available to be issued.

9. Commitments and Contingencies

Facility Lease Agreements

The Company leases laboratory and office space under non-cancelable operating agreements. The lease agreements provide for escalation of rent payments each year through 2025. The Company records rent expense on a straight-line basis over the term of the leases. For tenant improvement allowances funded by landlord incentives, the Company records a deferred lease incentive liability in accrued expenses and other liabilities and amortizes the deferred lease incentive liability as a reduction to rent expense on the consolidated statements of operations and comprehensive loss over the term of the applicable lease. The Company has recorded $0.6 million related to the required security deposits in other assets, long-term, in the consolidated balance sheets.

As of December 31, 2020, future minimum lease payments under the leases are as follows (in thousands):

2021	$ 2,610
2022	2,690
2023	2,771
2024	2,856
2025	2,745
Total	$13,672

Rent expense was $1.6 million and $2.5 million for the years ended December 31, 2019 and 2020, respectively.

Capital Lease

The Company has accounted for certain leased equipment as a capital lease due to the ownership of such equipment transferring to the Company at the end of the lease term. As of December 31, 2019 and 2020, the total

capital lease obligation amounted to $0.2 million and $0.1 million, respectively. The Company included the current portion of the capital lease obligation in the accrued expenses and other current liabilities and the non-current portion of the capital lease in other liabilities within the consolidated balance sheets. As of December 31, 2020, the sum of all remaining future minimum lease payments of the Company's capital lease amounts to $0.1 million, which is due within 12 months.

Research and Development Agreements

The Company enters into various agreements in the ordinary course of business, such as those with suppliers, contract research organizations, CMOs, CROs, and clinical trial sites, and the like. These agreements provide for termination at the request of either party with less than one-year notice and are, therefore, cancelable contracts and, if canceled, are not anticipated to have a material effect on the consolidated financial condition, results of operations or cash flows of the Company.

Guarantees and Indemnifications

In the normal course of business, the Company enters into agreements that contain a variety of representations and provide for certain indemnifications. The Company's exposure under these agreements is unknown because any such claims may be made against the Company in the future. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. As of December 31, 2019 and 2020, the Company does not have any material indemnification claims that were probable or reasonably possible and consequently has not recorded related liabilities.

Intellia Arbitration

On October 16, 2018, Intellia initiated an arbitration proceeding with JAMS asserting that the Company had violated the terms and conditions of the Intellia License Agreement. The arbitration involves whether two patent families relating, respectively, to CRISPR-Cas9 chRDNAs and Cas9 scaffolds are included in the Intellia License Agreement. On September 19, 2019, the parties received an interim award from the arbitration panel ruling that the two patent families are included in the Intellia License Agreement, but the arbitration panel granted the Company an exclusive leaseback to Cas9 chRDNAs under economic terms to be negotiated by the parties. On February 6, 2020, the arbitration panel clarified that the leaseback relates solely to the Company's CB-010 program and instructed the parties to negotiate economic terms based on a leaseback of that scope. The arbitration panel has retained jurisdiction of the dispute. The Company has not concluded its negotiations with Intellia. In the event that the parties are unable to reach economic terms, the arbitration panel may issue a final decision determining the economic terms of the leaseback agreement. The final outcome of the arbitration and its financial impact on the Company cannot be determined at this time.

10. Convertible Preferred Stock

The authorized, issued and outstanding shares of the convertible preferred stock and liquidation preferences as of December 31, 2019 and 2020, are as follows (in thousands, except for share amounts):

Series	Authorized Shares	Outstanding Shares	Liquidation Preference	Carrying Value
Series A	1,576,342	1,576,342	$3,550	$3,452
Series A-1	3,004,124	3,004,124	8,000	7,901
Series B	3,186,116	3,186,116	30,070	29,970
	7,766,582	7,766,582	$41,620	$41,323

The rights, preferences, and privileges of the Series A, Series A-1, and Series B convertible preferred stock as of December 31, 2019 and 2020, were as follows:

Dividends

The Company shall not declare, pay or set aside any dividends on shares of any other class or series of capital stock of the Company, other than dividends on shares of common stock payable in shares of common stock, unless the holders of the convertible preferred stock then outstanding shall first receive, or simultaneously receive, in order of priority first to Series B convertible preferred stock-holders, then to Series A convertible preferred stock-holders and the Series A-1 preferred convertible stock-holders, and finally to common stock. The dividend on each outstanding share of convertible preferred stock equals to the greater of (i) $0.18 per share of Series A preferred stock, (ii) $0.213 per share of Series A-1 preferred stock, and (iii) $0.76 per share of Series B preferred stock, subject to appropriate adjustment in the event of any stock dividend, stock split, or other similar recapitalization or (ii) the dividend's amount payable on such share on as-converted to common stock basis. No dividends have been declared to date.

Conversion

Convertible preferred stock is convertible, at the option of the holder, at any time, into fully paid, non-assessable shares of common stock at an initial conversion ratio of one-to-one.

The convertible preferred stock will automatically convert into common stock, at the then-applicable conversion rate, upon either (i) the closing of an underwritten initial public offering of the Company's common stock pursuant to a registration statement on Form S-1 under the Securities Act of 1933, as amended, at a price of at least $7.79 per share, resulting in at least $50.0 million of gross proceeds to the Company; (ii) the consent of at least a majority of the then outstanding shares of the preferred stock, voting together as a single class on as-converted to common stock basis, and the holders of a majority of the outstanding Series B convertible preferred stock, consenting together as a single class on an as converted to common stock basis.

Voting Rights

The holders of convertible preferred stock are entitled to that number of votes on all matters presented to stockholders equal to the number of shares of common stock then-issuable upon conversion of such preferred stock.

Liquidation

In the event of any sale of substantially all of the assets, a merger, or a liquidation, dissolution or winding up of the Company, as defined in the Company's certificate of incorporation, the holders of Series A, A-1 and B convertible preferred stock will be entitled to receive in preference to the holders of common stock an amount per share equal to the original issue price of $2.252, $2.663, and $9.4379 per share, respectively, as adjusted for stock splits, combinations, and reorganizations, plus declared and unpaid dividends, if any. Series B holders will receive their liquidation preference and any declared but unpaid dividends before any distribution is made to Series A and A-1 holders. Series A and A-1 holders will receive their liquidation preference and any declared but unpaid dividends ratably before any distribution is made to common holders. After distributions to all preferred stockholders of all preferential amounts, the remaining assets of the Company will be distributed among the holders of shares of preferred stock and common stock on a pro rata basis based on the number of shares held by each holder, treating the preferred stock on an as-converted basis immediately prior to such sale of assets, merger, or liquidation, dissolution or winding up.

Redemption

The convertible preferred stock is not redeemable at the option of the holder thereof. Upon the occurrence of certain change in control events that are outside of the Company's control, including liquidation,

sale or transfer, holders of the convertible preferred stock can effectively cause redemption for cash. As a result, the Company classified the convertible preferred stock as mezzanine equity on the consolidated balance sheets as the stock is contingently redeemable.

11. Common Stock

Common stockholders are entitled to dividends when and if declared by the Company's Board of Directors and after any convertible preferred share dividends are fully paid. The holder of each share of common stock is entitled to one vote. As of December 31, 2020, the Company has never declared a dividend.

Common stock reserved for future issuance, on an as converted basis, consists of the following:

	2019	2020
Preferred stock, issued and outstanding	14,119,631	14,119,631
Stock options, issued and outstanding	4,760,594	4,520,551
Stock options, authorized for future issuance	524,624	582,340
Restricted stock awards, issued and outstanding	—	5,999
Total	19,404,849	19,228,521

12. Stock Option Plan

In 2012, the Company adopted a 2012 Stock Option and Issuance Plan (the "2012 Plan"), which allowed for the granting of incentive stock options ("ISOs"), non-qualified stock options ("NSOs") and restricted stock awards ("RSAs") to employees, Board of Directors, and consultants. The Company granted a total 454,500 stock options under the 2012 Plan until it was superseded.

In 2013, the Company adopted a 2013 Equity Incentive Plan (as amended, the "2013 Plan"), which allows for the granting of ISOs and NSOs to the Company's employees, Board of Directors, and consultants. ISOs may be granted only to the Company's employees, including officers and directors who are also employees. NSOs may be granted to employees, consultants and non-employee directors.

Stock options under the 2013 Plan may be granted at prices no less than 100% of the estimated fair value of the common shares on the date of grant, as determined by the Company's Board of Directors, with a maximum term of 10 years; provided, however, that the exercise price of an ISO or an NSO granted to a 10% holder of outstanding shares shall not be less than 110% of the estimated fair value of the shares on the date of grant and may only be granted with a term of five years. In general, the Company's ISO grants vest over four years, with 25% of the option vesting after a one-year cliff and the remainder vesting monthly thereafter. The vesting periods for the Company's NSO grants vary depending upon the length of service provided to the Company and, for the years ended December 31, 2019 and 2020, such grants vested ratably from three months to two years.

As of December 31, 2020, a total of 5,102,891 shares of common stock are authorized for issuance and 582,340 shares are available for future grant under the 2013 Plan.

The following table summarizes stock option activity for employees and non-employees during the years ended December 31, 2019 and 2020:

	Shares Available to Grant	Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (a)
				(Aggregate Intrinsic Value in thousands)	
Outstanding at December 31, 2018	1,451,105	3,983,254	$ 1.30	5.8	$ 5,546
Options granted	(1,116,908)	1,116,908	$ 2.68	9.5	
Options exercised	—	(134,033)	$ 1.62	0.2	
Options cancelled or forfeited	190,435	(205,526)	$ 1.55	—	
Outstanding at December 31, 2019	524,624	4,760,594	$ 1.61	6.1	$ 4,817
RSAs granted	(5,999)	—			
Options granted	(509,820)	509,820	$ 2.82	9.3	
Options exercised	—	(191,430)	$ 1.41	4.1	
Options cancelled or forfeited	573,509	(573,509)	$ 2.47	—	
Outstanding at December 31, 2020	582,340	4,520,551	$ 1.64	5.3	$ 6,929
Exercisable at December 31, 2020		3,144,523	$ 1.17	3.9	$ 6,294
Vested and expected to vest at December 31, 2020		4,520,551	$ 1.64	5.3	$ 6,929

(a) The aggregate intrinsic value is calculated as the difference between the stock options exercise price and the estimated fair value of the underlying common stock at December 31, 2020.

The following table summarizes information about stock options outstanding for employees and non-employees as of December 31, 2020:

Exercise Prices	Shares Outstanding	Weighted-Average Remaining Contractual Term of Shares Outstanding (years)	Shares Exercisable	Weighted Average Remaining Contractual Term of Shares Exercisable (years)
$0.06	454,500	0.6	454,500	0.6
$0.24	263,610	1.4	263,610	1.4
$0.28	329,977	2.9	329,977	2.9
$0.40	608,021	3.1	608,021	3.1
$1.19	109,080	4.9	109,080	4.9
$1.62	325,301	3.9	321,210	3.9
$1.81	355,208	5.2	305,353	4.9
$2.68	1,541,192	8.2	657,859	7.8
$2.85	397,305	9.6	9,695	9.5
$2.95	136,350	2.4	85,218	2.4
	4,520,544		3,144,523	

The Company has recorded stock-based compensation expenses related to employee and non-employee stock options granted in the consolidated statements of operations and comprehensive loss as follows for the years ended December 31, 2019 and 2020 (in thousands):

	2019	2020
Research and development	$ 597	$ 694
General and administrative	637	308
Total	$1,234	$1,002

Stock-based compensation expenses related to employees were $1.2 million and $1.0 million for the years ended December 31, 2019 and 2020, respectively. Stock-based compensation expenses related to non-employees were $0.1 million and less than $0.1 million for the years ended December 31, 2019 and 2020, respectively.

Grant Date Fair Value

During the years ended December 31, 2019 and 2020, the Company granted 1,116,908 and 509,820 stock options to employees and non-employees with the grant date fair value of $1.62 and $1.82, respectively.

The Company estimated the fair value of each employee and non-employee stock option award on the grant date using the Black-Scholes option-pricing model based on the following assumptions for the years ended December 31:

	2019	2020
Volatility	70.3% to 70.7%	72.0% to 76.8%
Expected term (in years)	6.0 to 9.4	5.5 to 10.0
Risk free interest rate	1.9%	0.3% to 0.7%
Expected dividend yield	0.0%	0.0%

As of December 31, 2020, there was $2.1 million of unrecognized stock-based compensation expense related to employee and non-employee stock options that is expected to be recognized over a weighted-average period of 1.2 years.

Restricted Stock Awards

In June and October of 2020, the Company's Board of Directors granted a total of 5,999 RSAs to a non-employee that vested over a service period of three months. Stock-based compensation expense for RSAs is recognized ratably over the service period and amounted to less than $0.1 million for the year ended December 31, 2020, which was reported within the general and administrative expense in the consolidated statement of operations and comprehensive loss. RSAs were fully vested and outstanding in common stock as of December 31, 2020.

13. 401(k) Savings Plan

In 2017, the Company established a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code of 1986, as amended ("Tax Code"). The Company's 401(k) plan is available to all employees and allows participants to defer a portion of their annual compensation on a pretax basis subject to applicable laws. The Company also provides a 4% match for employee contributions up to a certain limit. During the years ended December 31, 2019 and 2020, the Company contributed $0.3 million to the 401(k) plan.

14. Income Taxes

The Company reported pre-tax book income (loss) in the United States of $(31.0) million and $(36.1) million for the years ended December 31, 2019 and 2020, respectively.

A reconciliation of the U.S. statutory income tax rate to the Company's effective tax rate is as follows:

	2019	2020
Federal income tax (benefit) at statutory rate	(21%)	(21%)
State taxes, net of federal benefit	(4%)	(6%)
Change in valuation allowance, federal	0%	19%
Change in valuation allowance, state	1%	6%
R&D tax credits, net of reserves	(2%)	(2%)
Other	2%	(1%)
Effective income tax rate	(24%)	(5%)

For the years ended December 31, 2019 and 2020, the Company's benefit from income taxes consisted of the following (in thousands):

	2019	2020
Current income taxes:		
Federal	$ (404)	$ (907)
State	(20)	7
Total current income tax (benefit) expense	(424)	(900)
Deferred income taxes:		
Federal	(6,201)	(950)
State	(912)	31
Total deferred income tax benefit	(7,113)	(919)
Total income tax benefit	$(7,537)	$(1,819)

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

The following table presents significant components of the Company's deferred tax assets and liabilities as of December 31, 2019 and 2020 (in thousands):

	2019	2020
Deferred tax assets:		
NOL and tax attributes	$ 2,362	10,110
Accrued expenses and reserve	359	868
Deferred revenue and expenses	511	505
State income taxes	8	7
Capitalized license and patent costs	68	1,493
Stock-based compensation	163	203
Total deferred tax assets	3,471	13,186
Valuation allowance	(1,350)	(10,702)
Net deferred tax assets	$ 2,121	$ 2,484
Deferred tax liabilities:		
Investments in equity securities	$(1,948)	$ (1,866)
Fixed assets	(824)	(773)
Total deferred tax liabilities	(2,772)	(2,639)
Net deferred tax liabilities	$ (651)	$ (155)

The Company has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets. As of December 31, 2019, a valuation allowance of $1.4 million was recorded against the Company's deferred tax assets. As of December 31, 2020, the Company's deferred tax assets were primarily the result of historical federal and state net operating loss ("NOL") and tax credit accrued expenses and reserves, and intangible assets capitalized. As of December 31, 2020, a valuation allowance of $10.7 million was recorded against the Company's deferred tax assets.

As of December 31, 2020, the Company had federal NOL carryforwards of $17.5 million, which do not expire. As of December 31, 2020, the Company had state NOL carryforwards of $15.9 million, which may be available to offset future state income, and which expire at various years beginning with 2036.

As of December 31, 2020, the Company generated federal research and development tax credit carryforwards of $3.8 million, which will begin to expire in 2034. As of December 31, 2020, the Company had state credit carryforwards of $2.8 million available to reduce future tax liabilities, which do not expire. The CARES Act, among other things, permits NOL carryovers and carrybacks to offset 100% of taxable income for taxable years beginning before 2021. In addition, the CARES Act allows NOLs incurred in tax years beginning after December 31, 2017 and before January 1, 2021 to be carried back to each of the five preceding taxable years to generate a refund of previously paid income taxes.

Under Section 382 of the Tax Code, the ability to utilize NOL carryforwards or other tax attributes, such as research tax credits, in any taxable year may be limited if the Company has experienced an "ownership change." Generally, a Section 382 ownership change occurs if there is a cumulative increase of more than 50 percentage points in the stock ownership of one or more stockholders or groups of stockholders who own at least 5% of a corporation's stock within a specified testing period. Similar rules may apply under state tax laws. As a result of the Company's analysis, the Company believes that there have been two ownership changes under Section 382; however, none of the Company's state NOL and research and development tax credit carryforwards is currently expected to expire unused. The Company may experience ownership changes as a result of future financing or other changes in the stock ownership.

The following table summarizes the activity related to the Company's unrecognized tax benefits for the two years ended December 31, 2020 (in thousands):

Unrecognized tax benefits—January 1, 2019	$ 589
Increases related to current year tax positions	215
Changes in prior year tax positions	6
Decreases related to lapse of statutes	—
Unrecognized tax benefits—December 31, 2019	810
Increases related to current year tax positions	363
Changes in prior year tax positions	180
Decreases related to lapse of statutes	—
Unrecognized tax benefits—December 31, 2020	$ 1,353

As of December 31, 2019 and 2020, the amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate were $0.4 million and zero, respectively. The Company does not expect a significant change to its unrecognized tax benefits over the next 12 months. The unrecognized tax benefits may increase or change during the next year for items that arise in the ordinary course of business.

The Company recognizes interest and penalties related to uncertain tax positions in income tax expense. As of December 31, 2019 and 2020, the Company had no accrued interest or penalties related to uncertain tax positions and no amounts have been recognized in the Company's consolidated statements of operations and comprehensive loss.

The Company files its federal and state income tax returns with varying statutes of limitations. The Company's tax years from 2012 will remain open to examination due to the carryover of the unused NOLs and tax credits. There are no ongoing examinations by taxing authorities at this time.

The CARES Act changed certain provisions of the Tax Act. Under the CARES Act, NOLs arising in taxable years beginning after December 31, 2017 and ending before January 1, 2021 may be carried back to each of the five taxable years preceding the tax year of such loss, but NOLs arising in taxable years beginning after December 31, 2020 may not be carried back. In addition, the CARES Act eliminated the limitation on the deduction of NOLs to 80% of current year taxable income for taxable years beginning before January 1, 2021, and increased the amount of interest expense that may be deducted to 50% of adjusted taxable income for taxable years beginning in 2019 or 2020. The Company has recorded an income tax benefit of $0.9 million related to this legislation and continues to examine the impact the Tax Act may have on its business.

On June 29, 2020, California Assembly Bill 85 (AB 85) was signed into law, which suspends the use of NOLs and limits the use of research tax credits for 2020, 2021, and 2022. There may be periods during which the use of NOLs is suspended or otherwise limited, and limitation on the use of certain tax credits to offset California income and tax liabilities could accelerate, or permanently increase, state taxes owed. The Company continues to examine the impact this may have on its business.

On December 27, 2020, the federal "Consolidated Appropriations Act, 2021" was enacted, which includes further COVID-19 economic relief and extension of certain expiring tax provisions. The relief package includes a tax provision clarifying that businesses with forgiven PPP loans can deduct regular business expenses that are paid for with loan proceeds. Additional COVID-19 pandemic relief tax measures include an expansion of the employee retention credit, enhanced charitable contribution deductions, and a temporary full deduction for business expenses for food and beverages provided by a restaurant. These benefits do not have a material impact on the current tax provision.

15. 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 amounts):

	2019	2020
Numerator:		
Net loss	$ (23,431)	$ (34,308)
Denominator:		
Weighted-average common shares outstanding used to compute net loss per share, basic and diluted	8,374,674	8,546,741
Net loss per share, basic and diluted	$ (2.80)	$ (4.01)

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 for all periods as the inclusion of all common stock equivalents outstanding 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 as of December 31:

	2019	2020
Convertible preferred stock	14,119,631	14,119,631
Stock options outstanding	4,760,594	4,520,551
Common shares subject to nonrecourse notes	409,795	409,795
	19,290,020	19,049,977

16. Subsequent Events

On February 9, 2021, the Company entered into a Collaboration and License Agreement with AbbVie Manufacturing Management Unlimited Company (AbbVie). The Company granted AbbVie an exclusive, royalty-bearing, worldwide license, with the right to grant sublicenses, under its Cas12a chRDNA and cell therapy intellectual property, as well as under intellectual property that will be developed under the collaboration, solely for AbbVie to develop, commercialize, manufacture and otherwise exploit the collaboration CAR-T products in the field of human diagnostics, prophylactics and therapeutics. Under the license, AbbVie has selected its initial target and has reserved six additional targets, which may be substituted into the two program slots during the collaboration. The Company will conduct certain preclinical research, development, and manufacturing activities under the collaboration, including manufacturing the supply of licensed product for phase 1 clinical studies, and AbbVie will reimburse us for all such activities (including reimbursement for time spent by Company's employees at a designated FTE rate. In accordance with the Agreement, the Company received an upfront cash payment of $30.0 million. The Company is eligible to receive up to $300.0 million in future developmental, regulatory, and launch milestones. The Company is also eligible to receive additional payments for commercial milestones as well as global royalties on incremental net sales of licensed products sold by AbbVie, its affiliates, and sublicensees in the high-single-digit to low-teens percent range, subject, in certain instances, to various reductions.

On March 2, 2021, the Company issued 6,663,940 shares of Series C convertible preferred stock at a purchase price of $17.257 per share. The Company received gross cash proceeds of $115.0 million and incurred $6.2 million in issuance costs.

On March 31, 2021, the Company entered into a ten-year lease agreement, which superseded and replaced its prior lease, as amended, and included additional office and laboratory space located within the same building in Berkeley, California. The lease agreement contains a renewal option for an additional term of five years. Monthly base rent under the lease agreement amounts to $0.3 million, subject to annual escalation of 3.1%, with a total minimum lease payment of $43.4 million payable over the next 10 years.

On March 30, 2021, the Company granted 1,561,079 common stock options to Company's employees and non-employees in accordance with Company's 2013 Plan.

On April 23, 2021, the Company entered into a license agreement with an unrelated third party under which the Company granted a non-exclusive license to certain CRISPR-Cas9 patent rights controlled by the Company. The Company will receive an upfront cash payment of low-single-digit millions of dollars, and a time-vesting warrant exercisable for shares of the third party's preferred stock. The Company has formed a new wholly-owned subsidiary for the purpose of holding this warrant.

The Company has evaluated subsequent events for consolidated financial statements purposes occurring through May 7, 2021, the date when these consolidated financial statements are available to be issued, and July 19, 2021 for the Forward Stock Split as described in Note 2. Based on this evaluation, it was determined that, other than the events described above, no subsequent events occurred that would require recognition or disclosure in the consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)
(in thousands, except share and per share amounts)

	December 31, 2020	March 31, 2021
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 15,953	$145,924
Accounts receivable	150	76
Contract assets ($250 and $0 from related party, respectively)	1,328	973
Other receivables	3,682	4,776
Prepaid expenses and other current assets	3,193	4,176
Total current assets	24,306	155,925
INVESTMENTS IN EQUITY SECURITIES	7,626	7,626
PROPERTY AND EQUIPMENT—NET	3,502	3,380
OTHER ASSETS	612	1,034
TOTAL ASSETS	$ 36,046	$167,965
LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT		
CURRENT LIABILITIES:		
Accounts payable ($500 and $0 to related party, respectively)	$ 2,601	$ 3,117
Accrued expenses and other current liabilities	8,973	13,163
Promissory note—PPP loan	654	655
Deferred revenue	161	5,275
Total current liabilities	12,389	22,210
LONG-TERM LIABILITIES:		
Deferred revenue, net of current portion ($50 and $50 from related party)	937	25,788
Deferred rent and lease incentive liability	925	917
Promissory note—PPP loan, net of current portion	924	926
Success payments liability	2,654	3,340
Other liabilities	176	168
Deferred tax liabilities	155	155
Total liabilities	18,160	53,504
COMMITMENTS AND CONTINGENCIES (Note 9)	—	—
CONVERTIBLE PREFERRED STOCK, par value $0.0001 per share—7,766,582 and 14,430,622 shares authorized at December 31, 2020 and March 31, 2021, respectively; 7,766,582 and 14,430,522 shares issued and outstanding at December 31, 2020 and March 31, 2021, respectively; (liquidation preference of $41,620 and $156,620 at December 31, 2020 and March 31, 2021, respectively)	41,323	150,150
STOCKHOLDERS' DEFICIT:		
Common stock, par value $0.0001 per share—28,933,380 and 44,451,000 shares authorized at December 31, 2020 and March 31, 2021, respectively; 9,710,830 and 10,295,444 shares issued and outstanding at December 31, 2020 and March 31, 2021, respectively	1	1
Additional paid-in capital	7,433	8,340
Accumulated deficit	(30,871)	(44,030)
Total stockholders' deficit	(23,437)	(35,689)
TOTAL LIABILITIES, CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIT	$ 36,046	$167,965

See accompanying notes to condensed consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(Unaudited)
(in thousands, except share and per share amounts)

	Three Months Ended March 31,	
	2020	2021
Licensing and collaboration revenue	$ 1,701	$ 1,586
Operating expenses:		
Research and development	8,641	10,165
General and administrative	3,489	4,596
Total operating expenses	12,130	14,761
Loss from operations	(10,429)	(13,175)
Other income (expense):		
Interest income	142	4
Interest expense	(3)	(5)
Change in fair value of equity securities	(733)	—
Other income	21	17
Total other income (expense)	(573)	16
Net loss before provision for income taxes	(11,002)	(13,159)
Benefit from income taxes	(1,202)	—
Net loss and comprehensive loss	$ (9,800)	$ (13,159)
Net loss per share, basic and diluted	$ (1.16)	$ (1.39)
Weighted-average common shares outstanding, basic and diluted	8,429,410	9,499,448

See accompanying notes to condensed consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(Unaudited)
(in thousands, except share amounts)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity (Deficit)
	Shares	Amount	Shares	Amount			
BALANCE—December 31, 2019	7,766,582	$ 41,323	8,839,205	$ 1	$ 4,025	$ 3,437	$ 7,463
Stock-based compensation expense	—	—	—	—	237	—	237
Net loss and comprehensive loss	—	—	—	—	—	(9,800)	(9,800)
BALANCE—March 31, 2020	7,766,582	$ 41,323	8,839,205	$ 1	$ 4,262	$ (6,363)	$ (2,100)
BALANCE—December 31, 2020	7,766,582	$ 41,323	9,710,830	$ 1	$ 7,433	$ (30,871)	$ (23,437)
Issuance of Series C convertible preferred stock, net of issuance costs of $6.2 million	6,663,940	108,827	—	—	—	—	—
Issuance of common stock on exercise of options	—	—	584,614	—	564	—	564
Stock-based compensation expense	—	—	—	—	343	—	343
Net loss and comprehensive loss	—	—	—	—	—	(13,159)	(13,159)
BALANCE—March 31, 2021	14,430,522	$ 150,150	10,295,444	$ 1	$ 8,340	$ (44,030)	$ (35,689)

See accompanying notes to condensed consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)
(in thousands)

	Three Months Ended March 31,	
	2020	2021
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (9,800)	$ (13,159)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	226	221
Loss on disposal of fixed assets	—	3
Intrerest expense	—	4
Change in fair value of equity securities	733	—
Stock-based compensation expense	237	343
Fair value of success payments liability	—	686
Acquired in-process research and development	425	—
Changes in operating assets and liabilities:		
Accounts receivable	(29)	74
Contract assets	303	355
Other receivables	(491)	(1,095)
Prepaid expenses and other current assets	715	(562)
Other assets	(19)	(421)
Accounts payable	(1,037)	37
Accrued expenses and other current liabilities	602	3,879
Deferred revenue, current and long-term	(378)	29,964
Deferred rent and lease incentive liability	7	(8)
Other liabilities	(448)	(8)
Deferred tax liabilities	(289)	—
Net cash provided by (used in) operating activities	(9,243)	20,313
CASH FLOWS FROM INVESTING ACTIVITIES:		
Proceeds from sale of equity securities	7,668	—
Purchases of property and equipment	(223)	(22)
Payments to acquire in-process research & development	(425)	—
Net cash provided by (used in) investing activities	7,020	(22)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from issuance of Series C convertible preferred stock, net of issuance costs	—	109,235
Proceeds from common stock options exercised	—	564
Principal payments for capital lease	(30)	(119)
Net cash provided by (used in) financing activities	(30)	109,680
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(2,253)	129,971
CASH AND CASH EQUIVALENTS —Beginning of period	41,070	15,953
CASH AND CASH EQUIVALENTS —End of period	$ 38,817	$ 145,924
SUPPLEMENTAL CASH FLOW INFORMATION:		
Cash paid for income taxes	$ 7	$ —
Cash paid for interest	$ 3	$ 1
SUPPLEMENTAL SCHEDULE OF NON-CASH INVESTING AND FINANCING ACTIVITES:		
Purchases of property and equipment unpaid at period end	$ 22	$ 95
Deferred issuance costs related to initial public offering unpaid at period end	$ —	$ 422
Series C convertible preferred stock issuance costs unpaid at period end	$ —	$ 408

See accompanying notes to condensed consolidated financial statements.

CARIBOU BIOSCIENCES, INC.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Description of the Business, Organization, and Liquidity

Business and Organization

Caribou Biosciences, Inc. (the "Company") is a clinical-stage CRISPR genome-editing biotechnology company. The Company is developing an internal pipeline of allogeneic CAR-T and CAR-NK cell therapies. It was incorporated in October 2011 as a Delaware corporation and is headquartered in Berkeley, California. The Company has four wholly-owned subsidiaries: Caribou Therapeutics Holdco, LLC, incorporated in Delaware in July 2014 and dissolved in December 2020; Antler Holdco, LLC, incorporated in Delaware in April 2019; Microbe Holdco, LLC, incorporated in Delaware in June 2020; and Arboreal Holdco, LLC, incorporated in Delaware in November 2020. The Company's wholly-owned subsidiaries hold interests in the Company's equity investments and do not have operating activities.

Liquidity

The Company has incurred net operating losses and negative cash flows from operations since its inception and had an accumulated deficit of $44.0 million as of March 31, 2021. During the three months ended March 31, 2021, the Company incurred a net loss of $13.2 million and generated $20.3 million of cash provided by operating activities. As of March 31, 2021, the Company had cash and cash equivalents of $145.9 million. The Company expects to continue to incur substantial losses, and its ability to achieve and sustain profitability will depend on the successful development, approval, and commercialization of product candidates and on the achievement of sufficient revenues to support its cost structure. The Company may never achieve profitability, and unless and until it does, the Company will need to continue to raise additional capital. Management expects that existing cash and cash equivalents of $145.9 million will be sufficient to fund its current operating plan for at least the next 12 months from the date of issuance of these condensed consolidated financial statements.

2. Summary of Significant Accounting Policies

There have been no changes to the significant accounting policies as disclosed in Note 2 to the Company's annual consolidated financial statements for the years ended December 31, 2019 and 2020 included elsewhere in this prospectus.

Forward Stock Split

In July 2021, the Company's board of directors approved an amendment to the Company's certificate of incorporation to effect a split of shares of the Company's outstanding common stock at a ratio of 1.818-for-1 (the "Forward Stock Split") effective as of July 15, 2021. The number of authorized shares was increased as a result of the Forward Stock Split, but the par values of the common stock and preferred stock were not adjusted as a result of the Forward Stock Split. All references to common stock, options to purchase common stock, common stock share data, per share data, and related information contained in the financial statements have been retrospectively adjusted to reflect the effect of the Forward Stock Split for all periods presented.

Basis of Presentation and Principles of Consolidation

The condensed consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP) and include the accounts of Caribou Biosciences, Inc. and its wholly-owned subsidiaries. All intercompany transactions are eliminated in consolidation.

In the opinion of the Company's management, the information furnished in these unaudited condensed consolidated financial statements reflect all adjustments, all of which are of a normal and recurring nature, necessary for a fair presentation of the financial position and results of operations for the reported interim periods. The Company considers events or transactions that occur after the balance sheet date but before the financial statements are issued to provide additional evidence relative to certain estimates or to identify matters that require additional disclosure. The results of operations for interim periods are not necessarily indicative of results to be expected for the full year or any other interim period.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities; the disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements; and the reported amounts of revenue, income, and expenses during the reporting period. On an ongoing basis, the Company evaluates its estimates and assumptions including those related to revenue recognition, common stock valuation, stock-based compensation expense, accrued expenses related to research and development activities, valuation of success payments liability, and income taxes. Management bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from those estimates.

Segments

The Company operates and manages its business as one reportable and operating segment, which is the business of developing an internal pipeline of allogeneic CAR-T and CAR-NK cell therapies. The Company's chief executive officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for allocating and evaluating financial performance. All long-lived assets are maintained in the United States.

Concentrations of Credit Risk and Other Uncertainties

Financial instruments that potentially subject the Company to concentration of credit risk consisted of cash and cash equivalents, accounts receivable, contract assets, other receivables, and investments in equity securities. Substantially all of the Company's cash and cash equivalents are deposited in accounts at one financial institution, and account balances may at times exceed federally insured limits. The Company believes the financial institution to be of high credit quality.

Licensees who represent 10% or more of the Company's revenues and accounts receivable and contract assets are as follows:

	Revenue		Accounts Receivable and Contract Assets	
	Three Months Ended			
	March 31, 2020	March 31, 2021	As of December 31, 2020	As of March 31, 2021
Licensee A	36.2%	38.8%	*	*
Licensee B	25.0%	34.1%	40.6%	55.8%
Licensee C	33.1%	*	*	*
Licensee D	*	*	13.2%	*
Licensee E, related party	*	*	16.9%	*
Licensee F	*	*	10.1%	*
Licensee G	*	*	*	14.9%
Licensee H	*	*	*	15.5%
Total	94.3%	72.9%	80.8%	86.2%

* Less than 10%

The Company monitors economic conditions to identify facts or circumstances that may indicate that any of its accounts receivable are not collectible and if the contract assets should be impaired. No allowance for doubtful accounts was recorded as of December 31, 2020 and March 31, 2021.

Deferred Issuance Costs

Issuance costs, consisting of legal, accounting, audit, and filing fees relating to in-process equity financings, including the Company's proposed initial public offering (IPO), are capitalized. Deferred issuance costs are offset against offering proceeds upon the completion of an equity financing or an offering. In the event an equity financing or an offering is terminated or delayed, deferred issuance costs will be expensed immediately as a charge to general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss. As of December 31, 2020, the Company did not capitalize any issuance costs. As of March 31, 2021, the Company capitalized deferred issuance costs in the amount of $0.4 million related to its planned IPO.

Patent Costs

The Company expenses costs for filing, prosecuting, and maintaining patents and patent applications, including certain of the patents and patent applications that the Company licenses from third parties, as incurred and classifies such costs as general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss. In addition, the Company is entitled to receive reimbursement of a portion of the filing, prosecution, and maintenance costs for certain patents and patent applications from third parties. The Company accrues for these reimbursements as the respective expenses are incurred and classifies such reimbursements as a reduction of general and administrative expenses. During the three months ended March 31, 2020 and 2021, the Company incurred gross patent costs of $2.3 million and $3.9 million, respectively. During the three months ended March 31, 2020 and 2021, the Company recorded $1.1 million and $2.1 million, respectively, of patent reimbursements as a credit to general and administrative expense.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (FASB) or other standard-setting bodies and adopted by the Company as of the specified effective date.

New Accounting Pronouncements Not Yet Adopted

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. This ASU requires a lessee to recognize in the statement of financial position a liability to make lease payments (the lease liability) and a right-to-use asset representing its right to use the underlying asset for the lease term. The Company may elect not to apply Topic 842 to short-term leases with a term of 12 months or less. This ASU is effective for the Company's fiscal years beginning after December 15, 2021 and interim periods within fiscal years beginning after December 15, 2022, with early adoption permitted. The Company is currently evaluating the impact of adoption of this update on its condensed consolidated financial statements.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments (Topic 326)*. The update provides guidance on the measurement of credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. The updated guidance replaces the current incurred loss impairment approach with a methodology to reflect expected credit losses and requires consideration of a broader range of reasonable and supportable information to explain credit loss estimates. This ASU is to be applied on a modified retrospective approach and is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2022, and interim reporting periods within beginning after December 15, 2023. Early adoption is permitted for all entities

for fiscal years beginning after December 15, 2018, and interim periods therein. The Company is currently evaluating the impact of adoption of this update on its condensed consolidated financial statements.

3. Fair Value Measurements and Fair Value of Financial Instruments

The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

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

Level 2—Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

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

Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and consider factors specific to the asset or liability.

The Company's financial instruments consisted of Level 1 and Level 3. Level 1 financial instruments are comprised of money market mutual funds. Level 3 financial instruments are comprised of success payments liability related to the MSKCC Agreement.

The following table sets forth the Company's financial instruments that were measured at fair value on a recurring basis by level within the fair value hierarchy (in thousands):

	Fair Value Measurements at December 31, 2020			
	Total	Level 1	Level 2	Level 3
Assets:				
Money market investments (included in cash and cash equivalents)	$ 15,953	$ 15,953	$ —	$ —
Total	$ 15,953	$ 15,953	$ —	$ —
Liabilities:				
Success payments liability	$ 2,654	$ —	$ —	$ 2,654
Total	$ 2,654	$ —	$ —	$ 2,654

	Fair Value Measurements at March 31, 2021			
	Total	Level 1	Level 2	Level 3
Assets:				
Money market investments (included in cash and cash equivalents)	$145,924	$145,924	$ —	$ —
Total	$145,924	$145,924	$ —	$ —
Liabilities:				
Success payments liability	$ 3,340	$ —	$ —	$ 3,340
Total	$ 3,340	$ —	$ —	$ 3,340

The following table sets forth a summary of the changes in the fair value of the Company's Level 3 financial liability (in thousands):

	Success Payments Liability
Balance at December 31, 2020	$ 2,654
Change in fair value	686
Balance at March 31, 2021	$ 3,340

The Company recorded $0.7 million change in fair value of the success payments liability as research and development expense in its condensed consolidated statement of operations and comprehensive loss for the three months ended March 31, 2021.

The Company utilizes a Monte Carlo simulation model that requires significant estimates and assumptions in determining the estimated MSKCC success payments liability under the MSKCC Agreement and associated expense at each balance sheet date. The assumptions used to calculate the fair value of the success payments are subject to a significant amount of judgment including the expected volatility, estimated term, and estimated number and timing of valuation measurement dates.

The Company's liability for the MSKCC success payments is carried at fair value and changes are recognized as expense until the success payments liability is paid or expires (Note 4). The Monte Carlo simulation methodology models the future movement of stock prices based on several key variables. The table below summarizes key assumptions used in the valuation of success payments liability:

	As of December 31, 2020	As of March 31, 2021
Fair value of common stock	$ 5.462	$ 6.6887
Risk free interest rate	0.93%	1.74%
Expected volatility	80%	80%
Probability	4.4% to 13.4%	5.9% to 17.1%
Expected term (years)	4.7 to 5.7	4.3 to 5.4

The computation of expected volatility was estimated using a combination of available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption and the Company's historical and implied volatility. The risk-free interest rate, expected volatility, and expected term assumptions depend on the estimated timing of the Company's phase 1 clinical trial and FDA approval of a particular product candidate. In addition, the Company incorporated the estimated number and timing of valuation measurement dates in the calculation of the success payments liability.

A small change in the assumptions and other inputs, such as the fair value of the Company's common stock, may have a relatively large change in the estimated valuation and associated liability and expense.

The carrying value of the promissory note approximates its fair value (see Note 8).

4. Significant Agreements

In-Licensing Agreements

The Regents of the University of California/University of Vienna

The Company entered into an Exclusive License Agreement, dated April 16, 2013, as amended, (the "UC/Vienna Agreement") with The Regents of the University of California ("UC") and the University of Vienna ("Vienna") (together, "UC/Vienna") wherein UC/Vienna granted the Company an exclusive worldwide license,

with the right to sublicense, in all fields to the foundational CRISPR-Cas9 patent family co-owned by UC, Vienna, and Dr. Emmanuelle Charpentier (the "CVC IP"). Dr. Charpentier has not granted the Company any rights, either directly or indirectly. The UC/Vienna Agreement continues until the last-to-expire patent or last-to-be-abandoned patent application licensed under the UC/Vienna Agreement; provided, however, that UC/Vienna may terminate the UC/Vienna Agreement upon the occurrence of certain events and the Company may terminate the UC/Vienna Agreement at its sole discretion upon written notice. Without patent term adjustment or patent term extension, the CVC IP will expire in 2033. The UC/Vienna Agreement includes certain diligence milestones that the Company must meet. For products and services sold by the Company that are covered by the CVC IP, the Company will owe low- to mid-single-digit percent royalties on net sales, subject to a minimum annual royalty. Prior to such time that the Company is selling products, the Company owes UC/Vienna an annual license maintenance fee. The Company may owe UC/Vienna up to $3.6 million in certain regulatory and clinical milestone payments in the field of human therapeutics and diagnostics for products developed by the Company, its affiliates, and sublicensees. Additionally, the Company pays UC/Vienna a specified percentage of sublicensing revenue the Company receives including cash and equity under the Company's sublicensing agreements, subject to certain exceptions. If the Company includes intellectual property owned or controlled by it in such sublicense, the Company pays UC/Vienna a low- double-digit percentage of sublicensing revenues received under the sublicense. If the Company does not include intellectual property owned or controlled by it in such sublicense, the Company pays UC/Vienna 50% of sublicensing revenues received under the sublicense. To date, the Company has entered into over 20 sublicensing agreements in a variety of fields such as human therapeutics, forestry, agriculture, research reagents, transgenic animals, certain livestock targets, internal research, bioproduction, cell lines, and microbial applications that include the CVC IP as well as other Cas9 intellectual property owned or controlled by the Company. The Company is obligated to reimburse UC for its prosecution and maintenance costs of the CVC IP.

For the three months ended March 31, 2020 and 2021, the Company paid UC/Vienna $0.2 million and $0.3 million, respectively, in sublicensing fees, which was recorded in research and development expenses in the condensed consolidated statements of operations and comprehensive loss.

The Company is obligated to reimburse UC for prosecution and maintenance costs of the CVC IP. For the three months ended March 31, 2020 and 2021, the Company reimbursed UC $1.9 million and $3.2 million, respectively, which was recorded in general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss.

On December 15, 2016, the Company entered into a Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement ("IMA") relating to the CVC IP. Under the IMA, CRISPR Therapeutics AG reimburses the Company 50% of the amounts the Company reimburses UC for patent prosecution and maintenance costs. For the three months ended March 31, 2020 and 2021, CRISPR Therapeutics AG reimbursed the Company $0.7 million and $1.6 million, respectively, which was recorded as a reduction of general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss.

Memorial Sloan Kettering Cancer Center

On November 13, 2020, the Company entered into an Exclusive License Agreement with MSKCC (the "MSKCC Agreement") under which the Company exclusively licensed know-how, biological materials, and related intellectual property relating to humanized single-chain variable fragments (scFvs) targeting CD371 for use in T cells, natural killer (NK) cells, and induced pluripotent stem cell (iPSC)-derived cells for allogeneic CD371-targeted cell therapy (the Company's CB-012 product candidate). The Company paid an upfront payment of $0.5 million in cash and $2.1 million in stock. For each licensed product, there are potential clinical, regulatory, and commercial milestones totaling $112.0 million and, in the event the Company, or Company's affiliates or sublicensees, receives regulatory approval for CB-012, the Company will owe low- to mid-single- digit percent royalties on net sales by the Company, its affiliates and its sublicensees. The Company's license

includes the right to sublicense through multiple tiers and the Company will owe MSKCC a percentage of upfront cash or equity received from the Company's sublicensees. The percentage owed decreases as the Company's products move through development, starting at a low-double-digit percentage if clinical trials have not yet begun and decreasing to a mid-single-digit percentage if the product is in later clinical trial stages. The Company is also responsible for a percentage of licensed patent costs. The MSKCC Agreement includes certain diligence milestones that the Company must meet, which may be extended upon payment of additional fees.

MSKCC is entitled to certain success payments in the event that the Company's common stock fair value increases by certain multiples of increasing value based on a comparison of the fair market value of the Company's common stock compared with the split-adjusted initial stock price of the Company's Series B convertible preferred stock financing of $5.1914, as adjusted for any future stock splits, during a specified time interval. Under the MSKCC Agreement, as a publicly traded company, the Company's common stock fair value is determined by any given 45-day VWAP (volume weight average trading price). At the Company's option, payments may be made in cash or common stock. The relevant time interval commences when the first patient is dosed with the Company's CB-012 product candidate in the first phase 1 clinical trial and ends upon the earlier of the third anniversary of approval of the Company's BLA by the FDA or 10 years from the date the first patient was dosed with CB-012 in the first phase 1 clinical trial. The aggregate success payments are not to exceed $35.0 million. Additionally, if the Company undergoes a change of control during the time period, a change of control payment may be owed, depending upon the increase in the Company's stock price due to the change of control and also to what extent success payments have already been paid. In no event will the combination of success payments and the change of control payment exceed $35.0 million.

The following table summarizes MSKCC success payments amounts:

Multiple of initial share price at issuance	5x	10x	15x
Success payment(s) (in millions)	$10.0	$10.0	$15.0

The Company may terminate the MSKCC Agreement upon 90 calendar days' prior written notice. MSKCC may terminate in the event of the Company's uncured material breach, bankruptcy, or criminal activity. In the event that MSKCC materially breaches the MSKCC Agreement in certain circumstances (*e.g.*, granting a third party a license in the Company's field), then during the time of such uncured breach, MSKCC is not entitled to receive any success payments or any change of control payment.

As of March 31, 2021, the estimated fair value of the total success payments obligation to MSKCC was $3.3 million, which was included in the condensed consolidated balance sheet. The Company recorded the change in fair value of success payments of $0.7 million as a research and development expense in its condensed consolidated statement of operations and comprehensive loss during the three months ended March 31, 2021.

Licensing and Collaboration Agreements

Intellia Therapeutics, Inc.

On July 16, 2014, the Company entered into a License Agreement, as amended ("Intellia License Agreement") and a Services Agreement ("Intellia Services Agreement") with Intellia, LLC, to which Intellia is a successor in interest. Under the Intellia License Agreement, the Company granted Intellia an exclusive worldwide license, with the right to sublicense, to certain CRISPR-Cas9 technology for a defined field of human therapeutics. Intellia granted the Company an exclusive worldwide license, with the right to sublicense, to its CRISPR-Cas9 technology for all fields outside of the defined field of human therapeutics, including a license to certain of Intellia's future CRISPR-Cas9 intellectual property until the Company's direct or indirect ownership percentage dropped below 10% (the "IP cut-off date"). Each party had the right to opt-in to any licenses in its field of use entered into by the other party prior to the IP cut-off date, subject to the terms and conditions of such license. The IP cut-off date occurred on January 30, 2018. Under the Intellia License Agreement, each party is

responsible for 30% of the other party's expenses for prosecution and maintenance of the licensed intellectual property. For the three months ended March 31, 2020 and 2021, the Company reimbursed Intellia less than $0.1 million, which was recorded as general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss. During the three months ended Month 31, 2020 and 2021, Intellia reimbursed the Company $0.4 million and $0.5 million (including reimbursement for a portion of the patent prosecution and maintenance costs of the CVC IP paid to UC), which was recorded as a reduction of general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss. The term of the Intellia License Agreement continues for the life of the licensed patents and patent applications; provided, however, that either party may terminate upon the occurrence of certain events.

Pioneer Hi-Bred International, Inc. (now Corteva Agriscience)

On July 13, 2015, the Company and Pioneer Hi-Bred International, Inc. ("Pioneer") (now Corteva Agriscience), then a DuPont company ("DuPont"), entered into an Amended and Restated Collaboration and License Agreement, as amended (the "Pioneer Agreement"). Under the terms of the Pioneer Agreement, the Company and Pioneer cross-licensed CRISPR intellectual property portfolios. Pioneer granted the Company an exclusive worldwide license, with the right to sublicense, to its CRISPR intellectual property in the field of research tools, as well as a non-exclusive worldwide license to such intellectual property in human and animal therapeutics, industrial biotechnology, certain agriculture segments, and other fields; and the Company granted Pioneer an exclusive worldwide license, with the right to sublicense, to its CRISPR intellectual property in a defined field of agriculture relating to specified row crops, as well as a non-exclusive worldwide license to such intellectual property in other agricultural applications, industrial biotechnology, nutrition and health and other fields. The Pioneer Agreement continues until the expiration, abandonment or invalidation of the last patent or patent application within the licensed intellectual property; provided, however, that the parties may terminate the Pioneer Agreement by mutual consent or either party may unilaterally terminate the Pioneer Agreement in the event of an uncured breach of a payment obligation, bankruptcy, or failure to maintain or own licensed intellectual property by the other party in the event the non-breaching party is materially adversely affected by such failure. The Company is obligated to pay low-single-digit percent royalties to Pioneer for the sales of the Company's products in the research tools field as well as certain sublicensing revenue in that field. The Company is eligible to receive milestone payments from Pioneer in the event certain regulatory and commercial milestones are met, for a total of up to $22.4 million, related to specified row crops as well as receiving low-single-digit percent royalties for sales of defined agricultural products and certain sublicensing revenue in that field. Through March 31, 2021, the Company received $0.3 million in milestone payments from Pioneer.

Under the Pioneer Agreement, the Company and Pioneer also entered into a three-year collaboration, funded by Pioneer, which ended in 2016. Initially, Pioneer owned the patents and patent applications developed under the collaboration and granted the Company an exclusive license thereto in the fields of research tools and therapeutics.

In December 2020, the Company and Pioneer entered into an amendment to the Pioneer Agreement under which Pioneer assigned to the Company the chRDNA patent family developed under the research collaboration, and the Company paid Pioneer an upfront payment of $0.5 million. The Company considered the payment to Pioneer in accordance with revenue recognition guidance and accounted for it as a reduction of the licensing and collaboration revenue within the condensed consolidated statements of operations and comprehensive loss. In addition to the upfront payment, the Company is obligated to pay 100% patent prosecution and maintenance costs going forward; up to $2.8 million in regulatory milestones for therapeutic products developed by the Company, its affiliates, and licensees; up to $20.0 million in sales milestones over a total of four therapeutics products sold by the Company, its affiliates, and licensees; and a low-single-digit percentage of sublicensing revenues received by the Company for licensing the chRDNA patent family after December 2020. During the three months ended March 31, 2021, the Company incurred $0.8 million of sublicensing fees, which was recorded as a research and development expense in its condensed consolidated statement of operations and comprehensive loss.

DuPont made equity investments at fair market value in the Company as part of the Company's Series A, A-1, and B convertible preferred stock financings.

Genus plc

On May 12, 2016, the Company entered into a Research Collaboration and License Agreement, as amended (the "Genus Agreement") with Genus plc ("Genus") under which the Company granted Genus an exclusive worldwide license to certain CRISPR-Cas9 technology for the introduction of genetic traits into cattle and pigs raised to produce protein primarily for human consumption; provided, however, that at the end of the four-year research collaboration, Genus was required to select a specified number of licensed products and the license is now limited to those particular products. The Genus Agreement continues until the expiration, abandonment, or invalidation of the last patent or patent application within the licensed patent rights; provided, however, that each party may terminate the Genus Agreement upon the occurrence of certain events, and Genus may terminate the Genus Agreement at its sole discretion upon written notice. In addition to an upfront payment received, the Company is eligible to receive milestone payments from Genus in the event certain regulatory and commercial milestones are met, for a total of $10.0 million. The Company will also be eligible to receive either low- to mid-single-digit percent royalties or low-single to low-double-digit percent royalties on net sales of licensed products.

The Company and Genus entered into a four-year research collaboration, which was funded by Genus. The collaboration ended in May 2020. During the three months ended March 31, 2020, the Company recognized revenue of $0.6 million related to the Genus Agreement, respectively. No revenue was recognized in relation with the Genus Agreement for the three months ended March 31, 2021.

Genus made an equity investment in the Company's Series B convertible preferred stock at fair market value.

Private Company License Agreement

On May 15, 2020, the Company entered into an Exclusive License Agreement, as amended, with a related party private company ("Private Company License Agreement"), under which the Company granted the private company an exclusive worldwide license under certain intellectual property rights and know-how in a defined field.

The Company is eligible to receive milestone payments for licensed products following the first commercial sale of each such licensed product in each of the United States and the first European country in which each such licensed product is sold by the private company. The private company may select one of several milestone payment amounts for each licensed product, which then dictates the applicable royalty rate for net sales of licensed products. The Company is also eligible to receive a percentage of sublicensing revenues earned by the private company.

The Private Company License Agreement will continue in force and effect until the expiration, abandonment, or invalidation of the last patent or patent application within the licensed patent rights. The Private Company License Agreement may be terminated during the term by either party for an uncured material breach or bankruptcy. Additionally, the private company may terminate the Private Company License Agreement upon 90 days' written notice to the Company.

As consideration for the exclusive license, the private company issued to the Company 7,500,000 shares of convertible preferred stock with an estimated fair value of $7.5 million, which was the price paid for similar shares by another investor, and was an arm's length transaction. The Company accounted for the grant of license as a contract with a customer under ASC 606 and recognized $7.5 million as license and collaboration revenue in its condensed consolidated statements of operations and comprehensive loss for the year ended December 31, 2020. No revenue was recognized in relation to the agreement for the three months ended March 31, 2020 and 2021.

On May 15, 2020, the Company entered into a separate option agreement under which it granted the private company a three-year option to negotiate an exclusive, royalty-bearing, worldwide license in a defined field to the CVC IP and certain other CRISPR-Cas9 patent rights controlled by the Company. The Company received a $50,000 upfront option payment and may receive annual option fees and an option exercise fee. The Company recorded the upfront payment received in long-term deferred revenue in the condensed consolidated balance sheet as of December 31, 2020 and March 31, 2021.

Collaboration and License Agreement with AbbVie

On February 9, 2021, the Company entered into a Collaboration and License Agreement with AbbVie Manufacturing Management Unlimited Company ("AbbVie") ("the AbbVie Agreement"). The collaboration is based on the selection and use of targets under programs, each referred to as a Program Slot (which may include one target or, for a dual CAR-T product, two targets), to develop collaboration CAR-T products (and corresponding licensed products). For each of AbbVie's two Program Slots (or up to four Program Slots, if AbbVie elects to expand the number as discussed below), the Company will collaborate to identify and develop one or more collaboration allogeneic CAR-T products directed toward the single cancer target or target combination chosen by AbbVie and as described in an applicable research plan, utilizing the Company's Cas12a chRDNA genome-editing and cell therapy technologies. The Company granted AbbVie an exclusive (even as to the Company), royalty-bearing, worldwide license, with the right to grant sublicenses, under the Company's Cas12a chRDNA and cell therapy intellectual property (as well as certain genome-editing technology that the Company may acquire in the future) and intellectual property that may be developed under the collaboration, solely for AbbVie to develop, commercialize, manufacture, and otherwise exploit the collaboration CAR-T products in the field of human diagnostics, prophylactics and therapeutics. Under the terms of the AbbVie Agreement, the Company will conduct certain preclinical research, development, and manufacturing activities under the collaboration, including certain activities for the manufacture and supply of licensed product for AbbVie's phase 1 clinical studies, and AbbVie will reimburse the Company for all such activities (including reimbursement for time spent by Company's employees at a designated FTE rate). The duration of the collaboration is not fixed. Under the terms of the AbbVie Agreement, AbbVie has selected its initial targets and has reserved six additional targets, which may be used or substituted into the two Program Slots or used for the third or fourth Program Slots if AbbVie expands the number of Program Slots during the collaboration.

During the collaboration, AbbVie may expand from two Program Slots to a total of four Program Slots by paying the Company an additional $15.0 million for each such Program Slot, provided that AbbVie must make such payment within the earlier of (a) 60 calendar days following completion of the phase 1 clinical studies for the initial collaboration CAR-T and (b) December 31, 2025. Under the terms of the AbbVie Agreement, the Company is eligible to receive up to $150.0 million in future developmental, regulatory, and product launch milestones for each Program Slot and up to $200.0 million in commercial milestones for each Program Slot. The Company is also eligible to receive global royalties on net sales of licensed products sold by AbbVie, its affiliates, and sublicensees in the high-single-digit to low-teens percent range, subject, in certain instances, to various reductions.

The term of the AbbVie Agreement will continue in force and effect until the date of expiration of the last royalty term of the last country in which a licensed product is exploited. On a licensed product-by-licensed product and country-by-country basis, the royalty term is the period of time beginning on the first commercial sale of a licensed product in a country and ending on the latest of (a) the expiration, invalidation, revocation, cancellation, or abandonment date of the last Company's patent that includes a valid claim that claims (i) the collaboration CAR-T product in such licensed product, or (ii) the method of making the collaboration CAR-T product in such licensed product (in the case of (ii), only for so long as no biosimilar product is commercially available in such country), in such country; (b) 10 years from the first commercial sale of such licensed product in such country; and (c) expiration of regulatory exclusivity for such licensed product in such country. The AbbVie Agreement may be terminated during the term by either party for an uncured material breach or bankruptcy. Additionally, AbbVie may terminate the AbbVie Agreement, in its entirety or on a licensed

product-by-licensed product basis, effective immediately upon written notice to the Company, if AbbVie in good faith believes that it is not advisable for AbbVie to continue to exploit the collaboration on CAR-T products or licensed products as a result of a perceived serious safety issue. AbbVie may also terminate the AbbVie Agreement in its entirety, or, for any or no reason, upon 90 days' prior written notice to the Company.

The transaction price in the AbbVie Agreement associated with the two Program Slots consists of the $30.0 million upfront cash payment and the estimated variable consideration related to the Company's performance of preclinical, development, and manufacturing activities under the collaboration and the developmental, regulatory, and launch milestones. The Company constrains the estimated variable consideration if the Company assesses that it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. The Company constrained all developmental, regulatory, and launch milestones as of March 31, 2021. The transaction price is re-evaluated in each reporting period and as changes in circumstances occur. The Company determined that the licenses it granted to AbbVie and the Company's participation in the joint governance committee are not capable of being distinct from the preclinical research, development, and manufacturing activities and therefore are combined into one performance obligation. The Company recognizes revenue based on the measure of progress using an estimated cost-based input method each reporting period.

The Company has not recognized any revenue for the three months ended March 31, 2021, as the Company has not incurred any costs related to its performance obligation under the AbbVie Agreement. The Company recognized short-term deferred revenue in the amount of $5.1 million and long-term deferred revenue in the amount of $24.9 million related to the upfront cash payment in the condensed consolidated balance sheet as of March 31, 2021.

5. Revenue

Disaggregation of Revenue

The Company disaggregates revenue by geographical market based on the location of research and development activities of its licensees. The following is a summary of revenue by geographic location for the three months ended March 31, 2020 and 2021 (in thousands):

	Three Months Ended March 31,	
	2020	2021
United States	$ 1,687	$ 1,475
Rest of world	14	111
Total	$ 1,701	$ 1,586

During the three months ended March 31, 2020, $1.1 million of revenue recognized by the Company related to performance obligations satisfied at a point in time, and $0.6 million of revenue recognized by the Company was related to performance obligations satisfied over time.

During the three months ended March 31, 2021, all of the $1.6 million of revenue recognized by the Company related to performance obligations satisfied at a point in time. No revenue related to performance obligations satisfied over time was recognized during the three months ended March 31, 2021.

Contract Balances

Accounts receivable relate to the Company's right to consideration for performance obligations completed (or partially completed) for which the Company has an unconditional right to consideration. The Company's accounts receivable balances represent amounts that are billed to licensees with invoices outstanding as of the period end.

Contract assets are rights to consideration in exchange for a license that the Company has transferred to a customer when such right is conditional on something other than the passage of time. The Company's contract asset balances represent royalties and milestones that are unbilled as of the period end.

Contract liabilities consist of deferred revenue and relate to amounts invoiced to or advance consideration received from customers, which precede the Company's satisfaction of the associated performance obligation(s). The Company's deferred revenue primarily results from upfront payments received relating to performance obligations that are satisfied over time related to the AbbVie Agreement. The remaining deferred revenue relates to upfront payments received under license agreements that also include non-refundable annual license fees, which are accounted for as material rights for license renewals and are recognized at the point in time the annual license fee is paid by the licensee and the renewal period begins.

The following table presents changes in the Company's contract assets and liabilities during the three months ended March 31, 2021 (in thousands):

	Balance at December 31, 2020	Additions	Deductions	Balance at March 31, 2021
Accounts receivable	$ 150	$ 2,533	$ (2,607)	$ 76
Contract assets:				
Unbilled accounts receivable	$ 1,328	$ 973	$ (1,328)	$ 973
Contract liabilities:				
Deferred revenue, current and long-term	$ 1,098	$ 30,580	$ (616)	$ 31,062

Unbilled accounts receivable decreased during the three months ended March 31, 2021 primarily due to billing of earned royalties accrued as of December 31, 2020.

Deferred revenue increased during the three months ended March 31, 2021 due to recognition of $30.0 million in deferred revenue related to the AbbVie Agreement (Note 4).

During the three months ended March 31, 2020 and 2021, the Company recognized $0.6 million and $0.1 million of revenues, respectively, that were included in the opening contract liabilities balance.

Transaction Prices Allocated to the Remaining Performance Obligations

Remaining unsatisfied performance obligations represent in aggregate the amount of a transaction price that has been allocated to performance obligations not delivered, or only partially undelivered, as of the end of the reporting period. The value of transaction prices allocated to remaining unsatisfied performance obligations as of March 31, 2021 was approximately $61.3 million. The Company expects to recognize approximately $5.3 million of remaining performance obligations as revenue in the next 12 months, and the remainder thereafter.

Capitalized Contract Acquisition Costs and Fulfillment Cost

The Company did not incur any expenses to obtain license and collaboration agreements and costs to fulfill those contracts do not generate or enhance resources of the Company. As such, no costs to obtain or fulfill a contract have been capitalized in any period.

6. Balance Sheet Items

Other receivables consisted of the following at (in thousands):

	December 31, 2020	March 31, 2021
Patent cost reimbursements	$ 3,672	$ 4,771
Other	10	5
Total	$ 3,682	$ 4,776

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

	December 31, 2020	March 31, 2021
Prepaid income taxes	$ 1,479	$ 1,479
Prepaid contract manufacturing costs	954	1,617
Other	760	1,080
Total	$ 3,193	$ 4,176

Property and equipment, net, consisted of the following at (in thousands):

	December 31, 2020	March 31, 2021
Furniture and equipment	$ 117	$ 117
Computer equipment	263	263
Lab equipment	5,038	5,135
Leasehold improvements	1,180	1,180
	6,598	6,695
Less: accumulated depreciation and amortization	(3,096)	(3,315)
Property and equipment, net	$ 3,502	$ 3,380

Depreciation and amortization expense related to property and equipment was $0.2 million for the three months ended March 31, 2020 and 2021.

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

	December 31, 2020	March 31, 2021
Accrued patent expenses	$ 5,087	$ 7,941
Income taxes payable	5	5
Accrued sublicensing fees	402	1,420
Accrued employee compensation and related expenses	2,081	880
Accrued research and development expenses	581	688
Credit card liability	193	565
Other	624	1,664
Total	$ 8,973	$ 13,163

7. Related Party Transactions

Amended and Restated Collaboration and License Agreement with Pioneer

As of December 31, 2020, DuPont held more than 10% of voting interest in the Company and Pioneer is, therefore, considered a related party. See Note 4 for more details.

Scientific Advisory Board Payments

Dr. Jennifer A. Doudna, a co-founder and significant shareholder of the Company, received compensation for participating on the Company's SAB. During the three months ended March 31, 2020 and 2021, the Company paid Dr. Doudna less than $0.1 million for her participation on the SAB.

Officer Promissory Note

In November 2018, the Company's President and Chief Executive Officer entered into a promissory note with the Company for $1.1 million, as a means to provide liquidity without triggering a taxable event. The note bears interest at a rate of 3.04%, compounded annually, and is payable in five years, together with principal and accrued interest. The promissory note is secured by 409,795 shares of Caribou common stock owned by the President and Chief Executive Officer and has been determined to be non-recourse for accounting purposes and, as such, the issuance of the promissory note is effectively the grant of a new share option. A one-time stock compensation charge of $0.7 million was recorded as general and administrative expenses during the year ended December 31, 2018. The promissory note was still outstanding as of December 31, 2020 and March 31, 2021.

8. Promissory Note

On May 6, 2020, the Company entered into a promissory note with WebBank (the "Lender") pursuant to the Paycheck Protection Program ("PPP") administered by the Small Business Administration ("SBA") under the Coronavirus Aid, Relief and Economic Security Act ("CARES Act") for a total amount of $1.6 million ("PPP Loan").

The PPP Loan had a two-year term and bore interest at a stated rate of 1.0% per annum, accrued monthly, beginning on the date the PPP Loan is issued by the Lender. Monthly principal and interest payments, less the amount of any potential forgiveness, commenced on the monthly payment date after which the SBA has notified the Lender of the forgiveness determination or, in the case of Lender's determination, beginning on the monthly payment date after the period for which the Company's right to request SBA review of such determination has lapsed on which a forgiveness decision is received from the Lender.

The Company did not provide any collateral or guarantees for the PPP Loan, nor did the Company pay any facility charge to obtain the PPP Loan. The PPP Loan provided for customary events of default, including, among others, those relating to failure to make payment, bankruptcy, breaches of representations, and material adverse effects. The Company may prepay the principal of the PPP Loan at any time without incurring any prepayment charges.

On May 22, 2021, the PPP Loan was forgiven in full by the SBA.

9. Commitments and Contingencies

Facility Lease Agreements

The Company leases laboratory and office space under non-cancellable operating agreements. On March 31, 2021, the Company entered into a ten-year lease agreement, which superseded and replaced its prior lease, as amended, and included additional office and laboratory space located within the same building in Berkeley, California. The lease agreement contains a renewal option for an additional term of five years. Monthly base rent under the lease agreement amounts to $0.3 million, subject to annual escalation from 3.1% to 3.5%.

The Company records rent expense on a straight-line basis over the term of the leases. For tenant improvement allowances funded by landlord incentives, the Company records a deferred lease incentive liability in accrued expenses and other liabilities and amortizes the deferred lease incentive liability as a reduction to rent expense on the condensed consolidated statements of operations and comprehensive loss over the term of the applicable lease. As of December 31, 2020 and March 31, 2021, the Company has recorded $0.6 million related to the required security deposits in other assets, long-term, in the condensed consolidated balance sheets.

As of March 31, 2021, future minimum lease payments under the leases are as follows (in thousands):

Remainder of 2021	$ 2,535
2022	3,485
2023	3,596
2024	3,708
2025	3,627
Thereafter	27,379
Total	$44,330

Rent expense was $0.7 million and $0.6 million for the three months ended March 31, 2020 and 2021, respectively.

Capital Lease

The Company has accounted for certain leased equipment as a capital lease due to the ownership of such equipment transferring to the Company at the end of the lease term. As of December 31, 2020, the total capital lease obligation amounted to $0.1 million, which was included in the current portion of the capital lease obligation in the accrued expenses and other current liabilities and the non-current portion of the capital lease in other liabilities within the condensed consolidated balance sheets. As of March 31, 2021, the capital lease obligation was repaid in full and the Company did not have any remaining future minimum lease payments related to this capital lease.

Research and Development Agreements

The Company enters into various agreements in the ordinary course of business, such as those with suppliers, contract research organizations, contract management organizations, clinical trial sites, and the like. These agreements provide for termination at the request of either party with less than one-year notice and are, therefore, cancellable contracts and, if cancelled, are not anticipated to have a material effect on the condensed consolidated financial condition, results of operations, or cash flows of the Company.

Guarantees and Indemnifications

In the normal course of business, the Company enters into agreements that contain a variety of representations and provide for certain indemnifications. The Company’s exposure under these agreements is unknown because any such claims may be made against the Company in the future. To date, the Company has not paid any claims or been required to defend any action related to its indemnification obligations. As of December 31, 2020 and March 31, 2021, the Company does not have any material indemnification claims that were probable or reasonably possible and consequently has not recorded related liabilities.

Intellia Arbitration

On October 16, 2018, Intellia initiated an arbitration proceeding with JAMS asserting that the Company had violated the terms and conditions of the Intellia License Agreement. The arbitration involves whether two patent families relating, respectively, to CRISPR-Cas9 chRDNAs and Cas9 scaffolds are included in the Intellia

License Agreement. On September 19, 2019, the parties received an interim award from the arbitration panel ruling that the two patent families are included in the Intellia License Agreement, but the arbitration panel granted the Company an exclusive leaseback to Cas9 chRDNAs under economic terms to be negotiated by the parties. On February 6, 2020, the arbitration panel clarified that the leaseback relates solely to the Company's CB-010 program and instructed the parties to negotiate economic terms based on a leaseback of that scope. The arbitration panel has retained jurisdiction of the dispute. The Company has not concluded its negotiations with Intellia. In the event that the parties are unable to reach economic terms, the arbitration panel may issue a final decision determining the economic terms of the leaseback agreement. The final outcome of the arbitration and its financial impact on the Company cannot be determined at this time.

10. Convertible Preferred Stock

The authorized, issued, and outstanding shares of the convertible preferred stock and liquidation preferences as of December 31, 2020 are as follows (in thousands, except for share amounts):

Series	Authorized Shares	Outstanding Shares	Liquidation Preference	Carrying Value
Series A	1,576,342	1,576,342	$ 3,550	$ 3,452
Series A-1	3,004,124	3,004,124	8,000	7,901
Series B	3,186,116	3,186,116	30,070	29,970
	7,766,582	7,766,582	$ 41,620	$ 41,323

The authorized, issued, and outstanding shares of the convertible preferred stock and liquidation preferences as of March 31, 2021, are as follows (in thousands, except for share amounts):

Series	Authorized Shares	Outstanding Shares	Liquidation Preference	Carrying Value
Series A	1,576,342	1,576,342	$ 3,550	$ 3,452
Series A-1	3,004,124	3,004,124	8,000	7,901
Series B	3,186,116	3,186,116	30,070	29,970
Series C	6,664,040	6,663,940	115,000	108,827
	14,430,622	14,430,522	$ 156,620	$ 150,150

The rights, preferences, and privileges of the Series A, Series A-1, Series B, and Series C convertible preferred stock as of December 31, 2020 and March 31, 2021, were as follows:

Dividends

The Company shall not declare, pay, or set aside any dividends on shares of any other class or series of capital stock of the Company, other than dividends on shares of common stock payable in shares of common stock, unless the holders of the convertible preferred stock then outstanding shall first receive, or simultaneously receive, in order of priority first to Series C convertible preferred stock-holders, then to Series B convertible preferred stock-holders, then to Series A convertible preferred stock-holders and the Series A-1 preferred convertible stock-holders, and finally to common stock. The dividend on each outstanding share of convertible preferred stock equals to the greater of (i) $0.18 per share of Series A preferred stock, (ii) $0.213 per share of Series A-1 preferred stock, (iii) $0.76 per share of Series B preferred stock, subject to appropriate adjustment in the event of any stock dividend, stock split, or other similar recapitalization, (iv) $1.38 per share of Series C preferred stock, or (v) the dividend's amount payable on such share on as-converted to common stock basis. No dividends have been declared to date.

Conversion

Convertible preferred stock is convertible, at the option of the holder, at any time, into fully paid, non-assessable shares of common stock at an initial conversion ratio of one-to-one.

The convertible preferred stock will automatically convert into common stock, at the then-applicable conversion rate, upon the earliest of (i) the closing of a firm-commitment underwritten public offering of the Company's common stock pursuant to a registration statement on Form S-1 under the Securities Act of 1933, as amended, at a price of at least $11.866 per share, resulting in at least $50.0 million of gross proceeds to the Company; (ii) the consent of at least a majority of the then outstanding shares of the preferred stock, voting together as a single class on as-converted to common stock basis, the holders of a majority of the outstanding Series B convertible preferred stock, consenting together as a single class on an as converted to common stock basis (unless the majority vote of the preferred stock referenced above is obtained in connection with a firm-commitment underwritten public offering resulting in at least $50.0 million of gross proceeds at a price of at least $7.7871), and the holders of at least two-thirds of the outstanding Series C convertible preferred stock, consenting together as a single class on an as converted to common stock basis; or (iii) the closing of a Qualified SPAC transaction, resulting in the public company surviving or resulting from the transaction has available cash immediately after consummation of the transaction of at least $50.0 million of gross proceeds to the Company and whereby outstanding Company's shares are exchanged for or otherwise converted into securities that are publicly listed on a securities exchange, and the aggregate value of such securities received with respect to each share of Series C preferred stock (or the common stock issuable upon conversion of one share of Series C Preferred Stock) is equal to at least $11.866 per share.

Voting Rights

The holders of convertible preferred stock are entitled to that number of votes on all matters presented to stockholders equal to the number of shares of common stock then-issuable upon conversion of such preferred stock.

Liquidation

In the event of any sale of substantially all of the assets, a merger, or a liquidation, dissolution, or winding up of the Company, as defined in the Company's certificate of incorporation, the holders of Series A, A-1, Series B, and Series C convertible preferred stock will be entitled to receive in preference to the holders of common stock an amount per share equal to the original issue price of $2.252, $2.663, $9.4379, and $17.257 per share, respectively, as adjusted for stock splits, combinations, and reorganizations, plus declared and unpaid dividends, if any. Series C holders will receive their liquidation preference and any declared but unpaid dividends before any distribution is made to Series B, Series A, and Series A-1 holders. Series B holders will receive their liquidation preference and any declared but unpaid dividends before any distribution is made to Series A and A-1 holders. Series A and A-1 holders will receive their liquidation preference and any declared but unpaid dividends ratably before any distribution is made to common holders. After distributions to all preferred stockholders of all preferential amounts, the remaining assets of the Company will be distributed among the holders of shares of preferred stock and common stock on a pro rata basis based on the number of shares held by each holder, treating the preferred stock on an as-converted basis immediately prior to such sale of assets, merger, or liquidation, dissolution, or winding up.

Redemption

The Company's convertible preferred stock is not redeemable at the option of the holder thereof. Upon the occurrence of certain change in control events that are outside of the Company's control, including liquidation, sale or transfer, holders of the convertible preferred stock can effectively cause redemption for cash. As a result, the Company classified the convertible preferred stock as mezzanine equity on the condensed consolidated balance sheets as the stock is contingently redeemable.

11. Common Stock

Common stockholders are entitled to dividends when and if declared by the Company's Board of Directors and after any convertible preferred share dividends are fully paid. The holder of each share of common stock is entitled to one vote. As of March 31, 2021, the Company has never declared a dividend.

Common stock reserved for future issuance, on an as converted basis, consists of the following:

	As of December 31, 2020	As of March 31, 2021
Preferred stock, issued and outstanding	14,119,631	26,234,654
Stock options, issued and outstanding	4,520,551	5,463,543
Stock options, authorized for future issuance	582,340	1,726,448
Restricted stock awards	5,999	—
Total	19,228,521	33,424,645

12. Stock Option Plan

In 2012, the Company adopted a 2012 Stock Option and Issuance Plan (the "2012 Plan"), which allowed for the granting of incentive stock options ("ISOs"), non-qualified stock options ("NSOs"), and restricted stock awards ("RSAs") to the Company's employees, Board of Directors, and consultants. The Company granted a total 454,500 stock options under the 2012 Plan until the Company adopted the 2013 Equity Incentive Plan (as amended, the "2013 Plan").

The 2013 Plan allows for the granting of ISOs and NSOs to the Company's employees, Board of Directors, and consultants. ISOs may be granted only to the Company's employees, including officers and directors who are also employees. NSOs may be granted to employees, consultants, and non-employee directors.

Stock options under the 2013 Plan may be granted at prices no less than 100% of the estimated fair value of the common shares on the date of grant, as determined by the Company's Board of Directors, with a maximum term of 10 years; provided, however, that the exercise price of an ISO or an NSO granted to a 10% holder of outstanding shares shall not be less than 110% of the estimated fair value of the shares on the date of grant and may only be granted with a term of five years. In general, the Company's ISO grants vest over four years, with 25% of the option vesting after a one-year cliff and the remainder vesting monthly thereafter. The vesting periods for the Company's NSO grants vary depending upon the length of service provided to the Company and such grants vested ratably from three months to two years.

As of March 31, 2021, a total of 7,189,991 shares of common stock are authorized for issuance and 1,726,448 shares are available for future grant under the 2013 Plan.

The following table summarizes stock option activity for employees and non-employees during the three months ended March 31, 2021:

	Shares Available to Grant	Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (a)
Outstanding at December 31, 2020	582,340	4,520,551	$ 1.64	5.3	$ 6,929
Addition—Option pool	2,671,714				
Options granted	(1,561,079)	1,561,079	$ 4.11	10.0	
Options exercised	—	(584,614)	$ 0.97	3.6	
Options cancelled or forfeited	33,469	(33,469)	$ 2.58	—	
Outstanding at March 31, 2021	1,726,448	5,463,536	$ 2.41	6.7	$ 9,292
Exercisable at March 31, 2021		2,752,161	$ 1.31	4.1	$ 7,693
Vested and expected to vest at March 31, 2021		5,463,543	$ 2.41	6.7	$ 9,292

(a) The aggregate intrinsic value is presented in thousands and is presented in thousands and is calculated as the difference between the stock options exercise price and the estimated fair value of the underlying common stock at March 31, 2021.

The following table summarizes information about stock options outstanding for employees and non-employees as of March 31, 2021:

Exercise Prices	Shares Outstanding	Weighted-Average Remaining Contractual Term of Shares Outstanding (years)	Shares Exercisable	Weighted Average Remaining Contractual Term of Shares Exercisable (years)
$ 0.06	454,500	0.3	454,500	0.3
$ 0.24	263,610	1.1	263,610	1.1
$ 0.28	239,077	3.7	239,077	3.7
$ 0.40	372,690	1.6	372,690	1.6
$ 1.19	109,080	4.6	109,080	4.6
$ 1.617	156,542	4.6	156,542	4.6
$ 1.810	272,548	6.4	244,427	6.4
$ 2.684	1,505,300	7.9	746,196	7.5
$ 2.855	392,760	9.3	71,165	9.2
$ 2.954	136,350	2.2	93,739	2.2
$ 4.109	1,561,079	10.0	1,135	10.0
	5,463,536		2,752,161	

The Company has recorded stock-based compensation expenses related to employee and non-employee stock options granted in the condensed consolidated statements of operations and comprehensive loss as follows for the years ended March 31, 2020 and 2021 (in thousands):

	Three Months Ended March 31,	
	2020	2021
Research and development	$ 162	$ 197
General and administrative	75	146
Total	$ 237	$ 343

Stock-based compensation expenses related to employees were $0.2 million and $0.3 million for the three months ended March 31, 2020 and 2021, respectively. Stock-based compensation expenses related to non-employees were less than $0.1 million for the three months ended March 31, 2020 and 2021, respectively.

Grant Date Fair Value

During the three months ended March 31, 2020, the Company granted 100,062 stock options to employees (no options were granted to non-employees) with weighted average grant date fair value of $1.58. During the three months ended March 31, 2021, the Company granted 1,561,079 stock options to employees and non-employees with weighted average grant date fair value of $2.73.

The Company estimated the fair value of each employee and non-employee stock option award on the grant date using the Black-Scholes option-pricing model based on the following assumptions for the three months ended March 31:

	2020	2021
Volatility	74.8% to 74.9%	76.4% to 76.5%
Expected term (in years)	5.7 to 6.0	6.0 to 6.1
Risk free interest rate	0.7%	1.1% to 1.2%
Expected dividend yield	0.0%	0.0%

As of March 31, 2021, there was $6.0 million of unrecognized stock-based compensation expense related to employee and non-employee options that is expected to be recognized over a weighted-average period of 1.7 years.

13. 401(k) Savings Plan

In 2017, the Company established a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code of 1986, as amended ("Tax Code"). The Company's 401(k) plan is available to all employees and allows participants to defer a portion of their annual compensation on a pretax basis subject to applicable laws. The Company also provides a 4% match for employee contributions up to a certain limit. During the three months ended March 31, 2020 and 2021, the Company contributed $0.1 million to the 401(k) plan.

14. Income Taxes

During the three months ended March 31, 2020, the Company recorded an income tax benefit of $1.2 million, representing an effective tax rate of 10.9%. The income tax benefit is primarily due to the recognition of net operating loss carrybacks under the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act, which generated a tax refund of taxes paid for the year ended December 31, 2018. No income tax benefit was recorded during the three months ended March 31, 2021.

15. 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 amounts):

	Three Months Ended March 31,	
	2020	2021
Numerator		
Net Loss	$ (9,800)	$ (13,159)
Denominator:		
Weighted-average common shares outstanding used to compute net loss per share, basic and diluted	8,429,410	9,499,448
Net loss per share, basic and diluted	$ (1.16)	$ (1.39)

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 for all periods as the inclusion of all common stock equivalents outstanding 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 as of December 31, 2020 and March 31, 2021:

	As of December 31, 2020	As of March 31, 2021
Convertible preferred stock	14,119,631	26,234,654
Stock options outstanding	4,520,551	5,463,543
Common shares subject to nonrecourse notes	409,795	409,795
	19,049,977	32,107,992

16. Subsequent Events

On April 23, 2021, the Company entered into a license agreement with an unrelated third party under which the Company granted a non-exclusive license to certain CRISPR-Cas9 patent rights controlled by the Company. The Company will receive an upfront cash payment of low-single-digit millions of dollars and a time-vesting warrant exercisable for shares of the third party's preferred stock. The Company has formed a new wholly-owned subsidiary for the purpose of holding this warrant.

On May 28, 2021, the Company granted 356,502 common stock options to the Company's employees and non-employees in accordance with Company's 2013 Plan.

On May 22, 2021, the PPP Loan was forgiven in full by the SBA. See Note 8 for more details.

On June 7, 2021, the officer promissory note was repaid in full, including $0.1 million of accrued interest. See Note 7 for more details.

The Company has evaluated subsequent events for condensed consolidated financial statements purposes occurring through June 11, 2021, the date when these condensed consolidated financial statements are available to be issued, and July 19, 2021 for the Forward Stock Split as described in Note 2. Based on this evaluation, it was determined that, other than the events described above, no subsequent events occurred that would require recognition or disclosure in the condensed consolidated financial statements.

Through and including August 16, 2021 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.

19,000,000 Shares

Common Stock

PROSPECTUS

BofA Securities

Citigroup

SVB Leerink

July 22, 2021