



Caribou Biosciences Announces Dosing of First Patient in Phase 1 Clinical Trial Evaluating CB-010, a CRISPR-Edited Allogeneic Anti-CD19 CAR-T Cell Therapy, in Patients with Relapsed or Refractory B Cell Non-Hodgkin Lymphoma

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- **FIRST ALLOGENEIC CAR-T CELL THERAPY WITH A PD-1 KNOCKOUT IN CLINICAL STUDIES**
- **INITIAL DATA FROM TRIAL EXPECTED IN 2022**

BERKELEY, CA – July 12, 2021 – [Caribou Biosciences, Inc.](#), a leading clinical-stage CRISPR genome-editing biopharmaceutical company, announced today that the first patient has been dosed in its open-label, multicenter ANTLER phase 1 clinical trial ([NCT04637763](#)) to evaluate the company's lead product candidate, CB-010, in patients with relapsed or refractory B cell non-Hodgkin lymphoma (r/r B-NHL). CB-010 is an allogeneic anti-CD19 CAR-T cell therapy derived from healthy donor T cells that have been engineered using Caribou's chRDNA technology to reduce the risk of graft versus host disease (GvHD) and knock out PD-1 to boost the persistence of CAR-T cell antitumor activity.

"Advancing our first allogeneic CAR-T cell therapy into the clinic represents a major milestone for Caribou," said Rachel Haurwitz, Ph.D., Caribou's president and chief executive officer. "Using our proprietary chRDNA CRISPR technology, we have developed a pipeline of off-the-shelf CAR-T and CAR-NK cell therapies with the potential to serve a greater number of patients than autologous approaches. We believe that improving cell persistence is the key to unlocking the full potential of these therapies. Using our technologies, we edit the genome of healthy donor-derived T cells to enable highly specific and efficient insertion or deletion of genes at multiple sites. This allows us to create sophisticated allogeneic cell therapies with enhanced characteristics to potentially improve their effectiveness and durability of antitumor activity compared to other allogeneic cell therapies. With CB-010, we are evaluating the potential persistence-enhancing effects of removing the PD-1 protein from the surface of these CD19-targeted CAR-T cells."

Cherry Thomas, M.D., senior vice president of clinical development, added, "We are thrilled to advance CB-010 in the clinic and believe it potentially represents a promising, differentiated therapy for patients. Initially, we will evaluate escalating doses of CB-010 in relapsed or refractory B cell non-Hodgkin lymphoma patients with the goals of assessing safety and tolerability and to establish a dose level for the expansion phase of the study. We look forward to having initial clinical data from this clinical trial in 2022."

About CB-010

CB-010 is an allogeneic anti-CD19 CAR-T cell therapy derived from healthy donor T cells. The cells are engineered using Caribou's chRDNA CRISPR technology to integrate a CD19-CAR site-specifically into the T cell genome at the site of the *TRAC* gene locus, thus eliminating expression of the T cell receptor to reduce the risk of GvHD. The cells are modified further using chRDNA to knock out the gene encoding PD-1, thus preventing the expression of the PD-1 protein on the CAR-T cell surface. Elimination of PD-1 expression is designed to boost the persistence of CAR-T cell antitumor activity by reducing CB-010 exhaustion and thereby potentially providing a better therapeutic index compared to other allogeneic CAR-T cells. An additional step in the manufacturing process for CB-010 is designed to remove residual T cells expressing a T cell receptor, further reducing the risk of GvHD.

About the Phase 1, Dose Escalation Study of CB-010 (ANTLER Study, [NCT04637763](#))

The ANTLER study is an open-label, multicenter phase 1 clinical trial designed to evaluate CB-010 in adults with r/r B-NHL. In the dose-escalation part of the study, adults who have failed at least two lines of chemo and/or immunotherapy will receive CB-010 following lymphodepletion. In a standard 3+3 dose escalation design, increasing doses of CB-010 will be evaluated to determine safety and tolerability and to establish a dose level for the expansion part of the study. The primary objective of the dose escalation is to evaluate the safety and tolerability of CB-010 and the primary objective of the expansion part of the study is to evaluate the efficacy of CB-010 in a defined population. Patients who have received a prior CD19-targeted therapy will be excluded from the study.

About Caribou's Novel Next-Generation CRISPR Platform

CRISPR genome editing uses easily designed, modular biological tools to make DNA changes in living cells. There are two basic components of Type II CRISPR systems: the nuclease protein that cuts DNA and the RNA molecule(s) that guide the nuclease to generate a site-specific, double-stranded break, leading to an edit at the targeted genomic site. CRISPR systems occasionally edit unintended genomic sites, known as off-target editing, which may lead to harmful effects on cellular function and phenotype. In response to this challenge, Caribou has developed chRDNAs (pronounced "chardonnays"), RNA-DNA hybrid guides that direct substantially more precise genome editing compared to all-RNA guides. Caribou is deploying the power of the chRDNA technology to carry out high efficiency multiple edits, including multiplex gene insertions, to develop CRISPR-edited therapies.

About Caribou Biosciences, Inc.

Caribou is a clinical-stage CRISPR genome-editing biopharmaceutical company dedicated to transforming the lives of patients with devastating diseases by applying the company's proprietary chRDNA technology toward the development of next-generation, genome-edited cell therapies. The company is developing a pipeline of genome-edited, off-the-shelf CAR-T and CAR-NK 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 as well as new targets.

For more information about Caribou, visit www.cariboubio.com and follow the company @CaribouBio.

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