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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): April 04, 2024

Caribou Biosciences, Inc.
(Exact name of Registrant as Specified in Its Charter)

Delaware	**001-40631**	**45-3728228**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**
2929 7th Street, Suite 105 Berkeley, California		**94710**
(Address of Principal Executive Offices)		**(Zip Code)**

Registrant's Telephone Number, Including Area Code: (510) 982-6030

N/A
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, $0.0001 par value per share	CRBU	NASDAQ Global Select Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company ☒

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

Item 7.01 Regulation FD Disclosure.

On April 4, 2024, Caribou Biosciences, Inc. (the "Company") issued a press release announcing that it has received clearance of its investigational new drug ("IND") application from the U.S. Food and Drug Administration ("FDA") for CB-010, an allogeneic anti-CD19 CAR-T cell therapy, for the treatment of lupus nephritis ("LN") and extrarenal lupus ("ERL"). The phase 1, multicenter, open label, GALLOP clinical trial of CB-010 in patients with LN and ERL is expected to initiate by year-end 2024. This represents an expansion of CB-010's clinical development to include autoimmune diseases in addition to oncology. A copy of the press release is furnished as Exhibit 99.1 to this Current Report on Form 8-K and also is incorporated by reference into this Item 7.01.

The Company will host a conference call and webcast today, Thursday, April 4, 2024, at 5:00 pm ET, to discuss the expansion of the clinical development of CB-010 to include autoimmune diseases and the GALLOP Phase 1 clinical trial plans. A copy of the slide presentation to be used during the Company's conference call and webcast is attached hereto as Exhibit 99.2 and incorporated by reference herein. Details for accessing the conference call and webcast are included in Exhibit 99.1.

The information contained in this Item 7.01 and in the accompanying Exhibits 99.1 and 99.2 shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or incorporated by reference in any filing or other document under the Exchange Act or the Securities Act of 1933, as amended (the "Securities Act"), regardless of any general incorporation language in any such filing or document, except as shall be expressly set forth by specific reference in any such filing or document.

Item 8.01 Other Events.

On April 4, 2024, the Company announced that it has received clearance of its IND application from the FDA for for CB-010, an allogeneic anti-CD19 CAR-T cell therapy, for the treatment of LN and ERL. The phase 1, multicenter, open label, GALLOP clinical trial of CB-010 in patients with LN and ERL is expected to initiate by year-end 2024. This represents an expansion of CB-010's clinical development to include autoimmune diseases in addition to oncology. Patients in both the GALLOP and ANTLER phase 1 clinical trials will be screened for donor-specific antibodies and administered CB-010 manufactured from a donor with partial human leukocyte antigen matching.

Cautionary Note Regarding Forward-Looking Statements

This Current Report, including Exhibits 99.1 and 99.2, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Statements that are not historical facts are forward-looking statements. Forward-looking statements may relate to future events or future performance. These forward-looking statements are not historical facts, but rather are based on current expectations, estimates and projections about the Company, its industry, its beliefs, and its assumptions. 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. These forward-looking statements include, without limitation, statements related to the Company's strategy, plans, and objectives, and expectations regarding its clinical and preclinical development programs, including its expectations relating to the timing of the initiation of the GALLOP Phase 1 clinical trial for CB-010. These forward-looking statements also include statements regarding the timing for, and likelihood of, reporting progress on and additional clinical data from the ongoing ANTLER Phase 1 clinical trial for the Company's CB-010 product candidate and the sufficiency of the Company's cash to fund its current operating plan. Management believes that these forward-looking statements are reasonable as and when made. However, such forward-looking statements are subject to risks and uncertainties, and actual results may differ materially from any future results expressed or implied by the forward-looking statements. Risks and uncertainties include, without limitation, risks inherent in the development of cell therapy products; uncertainties related to the initiation, cost, timing, progress, and results of the Company's current and future research and development programs, preclinical studies, and clinical trials; and the risk that initial, preliminary, or interim clinical trial data will not ultimately be predictive of the safety and efficacy of the Company's product candidates or that clinical outcomes may differ as patient enrollment continues and as more patient data becomes available; the risk that preclinical study results observed will not be borne out in human patients or different conclusions or considerations are reached once additional data have been received and fully evaluated; as well as other risk factors described from time to time in the Company's filings with the Securities and Exchange Commission, including its Annual Report on Form 10-K for the year ended December 31, 2023 and subsequent filings. In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of

future events. Except as required by law, the Company undertakes no obligation to update publicly any forward-looking statements for any reason.

In addition, caution should be exercised when interpreting results from separate trials involving separate product candidates. Clinical trials of other CAR-T cell therapies referenced in Exhibits 99.1 and 99.2 were run independently of the Company and the Company has only reviewed publicly available reports of those trials. The Company has not performed any head-to-head trials comparing any of these other CAR-T cell therapies with CB-010. As such, the results of these other clinical trials may not be comparable to clinical results for CB-010. The design of these other trials may vary in material ways from the design of the clinical trials for CB-010, including with respect to patient populations, follow-up times, the clinical trial phase, and subject characteristics. As a result, cross-trial comparisons may have no interpretive value on the Company's existing or future results. For further information and to understand these material differences, you should read the reports for the other product candidates' clinical trials.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press Release issued by Caribou Biosciences, Inc. on April 4, 2024
99.2	Caribou Biosciences, Inc. Webcast Slide Presentation dated April 4, 2024 Regarding Expansion of CB-010 Clinical Development to Include Autoimmune Program
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Caribou Biosciences, Inc.

Date: April 4, 2024

By: /s/ Rachel E. Haurwitz

Rachel E. Haurwitz
President and Chief Executive Officer

Caribou Biosciences Expands Clinical Development of CB-010 with FDA Clearance of IND in Lupus

-- FDA has cleared Caribou's IND application for CB-010 in lupus nephritis and extrarenal lupus; GALLOP Phase 1 clinical trial expected to initiate by YE 2024 --

-- Driven by encouraging initial safety and efficacy in the ongoing ANTLER trial for r/r B-NHL, CB-010 clinical development has expanded to include autoimmune diseases --

-- Advancing ANTLER Phase 1 trial for 2L LBCL; initial dose expansion data to be shared at a medical congress in Q2 2024 --

-- Conference call and webcast scheduled for today at 5:00 pm ET --

BERKELEY, CA, April 4, 2024 – Caribou Biosciences, Inc. (Nasdaq: CRBU), a leading clinical-stage CRISPR genome-editing biopharmaceutical company, today announced that it received clearance of its Investigational New Drug (IND) application from the U.S. Food and Drug Administration (FDA) for CB-010, an allogeneic anti-CD19 CAR-T cell therapy with a PD-1 knockout (KO), for the treatment of lupus nephritis (LN) and extrarenal lupus (ERL). The Phase 1, multicenter, open label GALLOP clinical trial of CB-010 in patients with LN and ERL is expected to initiate by year-end 2024.

"CB-010 has demonstrated encouraging initial safety and efficacy in patients with relapsed or refractory B cell non-Hodgkin lymphoma, and we are excited to expand CB-010's clinical development to include autoimmune diseases," said Rachel Haurwitz, PhD, Caribou's president and chief executive officer. "By targeting CD19-positive B cells involved in the production of autoantibodies and the perpetuation of the autoimmune response, our off-the-shelf CAR-T cell therapy CB-010 has the potential to greatly improve the standard of care for patients with lupus, a prevalent and severe autoimmune disease."

CB-010 is the lead clinical-stage product candidate from Caribou's allogeneic CAR-T cell therapy platform. As previously reported, CB-010 has demonstrated encouraging initial safety and efficacy from the dose escalation portion of the ongoing ANTLER Phase 1 trial (https://investor.cariboubio.com/news-releases/news-release-details/caribou-biosciences-reports-positive-clinical-data-dose) in patients with relapsed or refractory B cell non-Hodgkin lymphoma (r/r B-NHL). Caribou continues to enroll patients with large B cell lymphoma (LBCL) in the second-line setting, and initial dose expansion data from ANTLER will be presented at a medical congress in Q2 2024.

"Despite treatment advancements, fatigue, organ damage, and low health-related quality of life often remain life-long characteristics of lupus," said Richard Lafayette, MD, professor of medicine, Stanford Medicine Health Care. "An allogeneic anti-CD19 CAR-T cell therapy from healthy donor T cells has the potential to revolutionize lupus treatment, offering a readily available treatment for patients who need new therapeutic options."

Lupus is an autoimmune disease characterized by widespread inflammation that damages tissues and organs throughout the body. B cells, which normally produce antibodies that protect from infection, can play a devastating role in lupus by producing autoantibodies that cause the immune system to attack healthy tissues. CB-010 targets CD19, a protein on the surface of B cells, and has a PD-1

knockout (KO) that reduces CAR-T cell exhaustion. CB-010 holds the potential for deep depletion of disease-causing B cells which could reset the immune system, leading to sustained drug-free remission. In the ongoing ANTLER trial, depletion and recovery of patients' B cells is on par with the duration of B cell aplasia recently reported by Müller et al.[1] Unlike many autologous and allogeneic CAR-T cell therapies, the manufacture of CB-010 does not rely on lentiviral or other retroviral vectors, which the FDA has recently identified may lead to risk of secondary malignancy potentially due to random integration of the chimeric antigen receptor (CAR) construct. Instead, the chRDNA technology allows for precise insertion of the CAR at an intended location within the T cell genome. The GALLOP trial will include partial HLA matching between donor sources and patients, which may lead to improved clinical outcomes based on data from the ongoing ANTLER trial.

"The human leukocyte antigen, or HLA, system acts as our body's identity card to know one's 'self' from 'not self.' In stem cell transplants, it has been shown that a close HLA match between patients and donors significantly reduces the rejection of the therapy. This same logic can be applied to allogeneic CAR-T cells as well, so that the activity of the therapy persists long enough to target and destroy the diseased cells," said Mehdi Hamadani, MD, professor of medicine, section chief of hematologic malignancies at Medical College of Wisconsin and investigator for the ongoing ANTLER Phase 1 trial. "Intriguing data from the ongoing ANTLER trial support incorporating an HLA matching strategy into Caribou's CB-010 trials, an innovative clinical approach that can potentially improve outcomes for patients. I am pleased to be part of the ANTLER trial to advance the development of CB-010 as an off-the-shelf CAR-T cell therapy that aims to address the limitations of currently approved treatment options."

Caribou continues to expect the $372.4 million cash, cash equivalents, and marketable securities, as of December 31, 2023, to fund the current operating plan into Q1 2026.

About the GALLOP trial

The GALLOP Phase 1 trial is an open-label, multicenter clinical trial designed to evaluate a single infusion of CB-010 in adult patients with LN and ERL. The GALLOP trial will evaluate the safety, pharmacokinetic (PK) profile, and initial clinical activity of a single dose level of CB-010 following a lymphodepletion regimen of cyclophosphamide at 20mg/kg/day for 2 days followed by fludarabine at 25mg/m^2/day for 3 days. Patients will be screened for donor-specific antibodies and administered CB-010 manufactured from a donor with partial HLA matching. The primary endpoint is safety.

Webcast conference call today at 5:00 pm ET

Caribou will host a live conference call and webcast today at 5:00 pm ET to discuss the expansion of the clinical development of CB-010 to include an autoimmune program for lupus and the GALLOP Phase 1 clinical trial plans. The webcast presenters will include:

- Richard Lafayette, MD, professor of medicine, Stanford Medicine Health Care
- Mehdi Hamadani, MD, professor of medicine, section chief of hematologic malignancies at Medical College of Wisconsin and investigator for the ongoing ANTLER Phase 1 trial
- Rachel Haurwitz, PhD, president and chief executive officer, Caribou Biosciences

Additional webcast participants include:

- Steven Kanner, PhD, chief scientific officer of Caribou
- Jason O'Byrne, chief financial officer, Caribou Biosciences
- Tonia Nesheiwat, PharmD, vice president of medical affairs and project leadership, Caribou Biosciences

If you would like the option to ask a question on the live conference call, please use this link (https://register.vevent.com/register/BI61ec32b350e64c519e6743086d17dedb) to register to receive a personal PIN to access the conference call and to ask a question.

The listen-only webcast will be accessible under Events (https://investor.cariboubio.com/news-events/events) in the Investors section of Caribou's website. The archived audio webcast will be available on the company's website following the call and will be available for 30 days.

About CB-010

CB-010 is the lead clinical-stage product candidate from Caribou's allogeneic CAR-T cell therapy platform, and it is being evaluated in patients with relapsed or refractory B cell non-Hodgkin lymphoma (r/r B-NHL) and will be evaluated in patients with LN and ERL. In the ongoing ANTLER Phase 1 trial, Caribou is enrolling second-line patients with large B cell lymphoma (LBCL) comprised of different subtypes of aggressive r/r B-NHL (DLBCL NOS, PMBCL, HGBL, tFL, and tMZL). In the GALLOP Phase 1 trial, CB-010 will be evaluated in patients with LN and ERL.

CB-010 is an allogeneic anti-CD19 CAR-T cell therapy engineered using Cas9 CRISPR hybrid RNA-DNA (chRDNA) technology. To Caribou's knowledge, CB-010 is the first allogeneic CAR-T cell therapy in the clinic with a PD-1 knockout, a genome-editing strategy designed to improve activity against diseases by limiting premature CAR-T cell exhaustion. To Caribou's knowledge, CB-010 is also the first anti-CD19 allogeneic CAR-T cell therapy to be evaluated in the second-line LBCL setting and, for r/r B-NHL, CB-010 has been granted Regenerative Medicine Advanced Therapy (RMAT), Fast Track, and Orphan Drug designations by the FDA. Additional information on the ANTLER trial (NCT04637763) can be found at clinicaltrials.gov (https://clinicaltrials.gov/study/NCT04637763).

About lupus nephritis and extrarenal lupus

Lupus nephritis (LN) and extrarenal lupus (ERL) are sub-categories of systemic lupus erythematosus (SLE), the most common form of lupus. Lupus is a chronic autoimmune disease characterized by B cell dysfunction in which the immune system attacks its own tissues, causing widespread inflammation and organ damage.[2] There are approximately 320,000 patients with SLE in the US.[3] It has been estimated about 50% of patients with SLE will develop lupus nephritis, and of those, roughly 10-30% of patients will progress to end-stage renal disease, which requires dialysis or kidney transplant.[4]

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 Class 2 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 are capable of editing 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 CRISPR hybrid RNA-DNA guides (chRDNAs; pronounced "chardonnays") that direct substantially more precise genome editing

compared to all-RNA guides. Caribou is deploying the power of its chRDNA technology to carry out high efficiency multiple edits, to develop CRISPR-edited therapies.

About Caribou Biosciences, Inc.
Caribou Biosciences is a clinical-stage CRISPR genome-editing biopharmaceutical company dedicated to developing transformative therapies for patients with devastating diseases. The company's genome-editing platform, including its Cas12a chRDNA technology, enables superior precision to develop cell therapies that are armored to potentially improve antitumor activity. Caribou is advancing a pipeline of clinical-stage off-the-shelf cell therapies from its CAR-T platform as readily available treatments for patients with hematologic malignancies and autoimmune disease. Follow us @CaribouBio and visit www.cariboubio.com.

Forward-Looking Statements
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, without limitation, statements related to Caribou's strategy, plans, and objectives, and expectations regarding its clinical and preclinical development programs, including its expectations relating to the timing of initiating patient enrollment in the GALLOP Phase 1 clinical trial for CB-010. These forward-looking statements also include statements regarding the timing for, and likelihood of, reporting progress on and additional clinical data from the ongoing ANTLER Phase 1 clinical trial for Caribou's CB-010 product candidate and the sufficiency of the company's cash to fund its current operating plan. Management believes that these forward-looking statements are reasonable as and when made. However, such forward-looking statements are subject to risks and uncertainties, and actual results may differ materially from any future results expressed or implied by the forward-looking statements. Risks and uncertainties include, without limitation, risks inherent in the development of cell therapy products; uncertainties related to the initiation, cost, timing, progress, and results of Caribou's current and future research and development programs, preclinical studies, and clinical trials; and the risk that initial, preliminary, or interim clinical trial data will not ultimately be predictive of the safety and efficacy of Caribou's product candidates or that clinical outcomes may differ as patient enrollment continues and as more patient data becomes available; the risk that preclinical study results observed will not be borne out in human patients or different conclusions or considerations are reached once additional data have been received and fully evaluated; as well as other risk factors described from time to time in Caribou's filings with the Securities and Exchange Commission, including its Annual Report on Form 10-K for the year ended December 31, 2023 and subsequent filings. In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. Except as required by law, Caribou undertakes no obligation to update publicly any forward-looking statements for any reason.

Caution should be exercised when interpreting results from separate trials involving separate product candidates. Results of other CAR-T cell therapies referenced in this press release have been derived from publicly available reports of clinical trials run independently of Caribou, and Caribou has not performed any head-to-head trials comparing any of these other CAR-T cell therapies with CB-010. As such, the results of these clinical trials may not be comparable to clinical results for CB-010 and cross-trial comparisons may have no interpretative value on Caribou's existing or future results.

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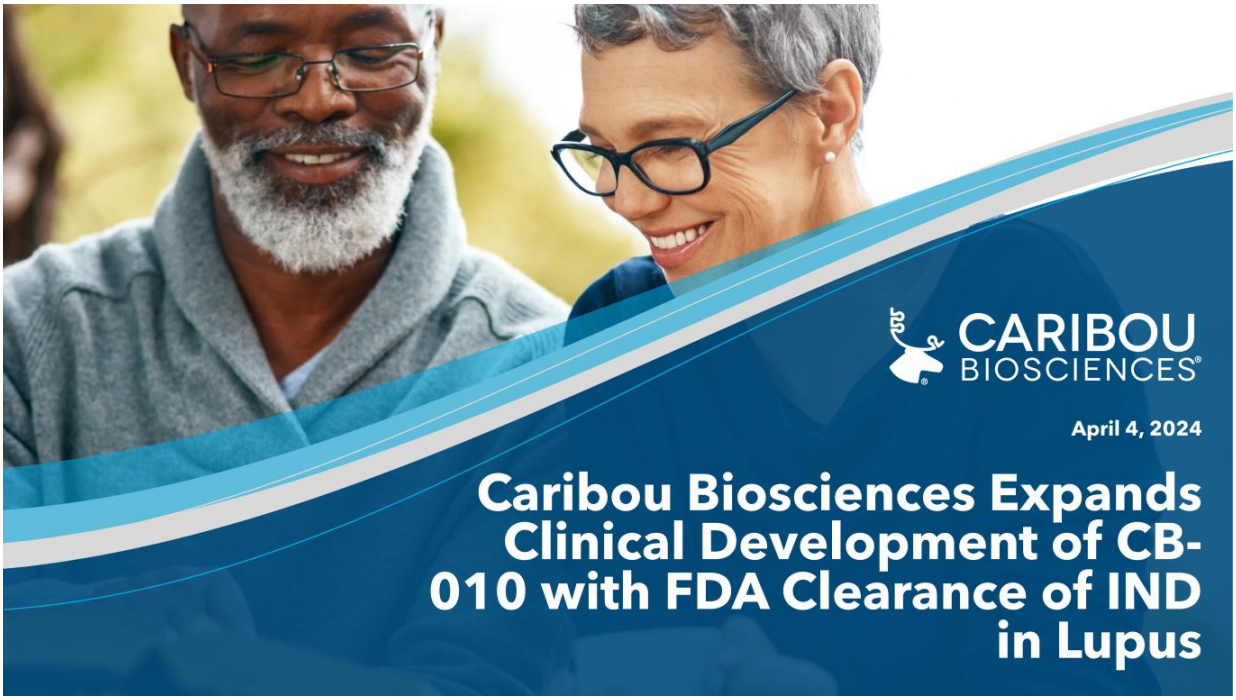
media@caribioubio.com

[1]Müller F, Taubmann J, Bucci L, et al. CD19 CAR T-Cell Therapy in Autoimmune Disease - A Case Series with Follow-up. N Engl J Med. 2024 Feb 22;390(8):687-700.
[2]Karrar S, Cunninghame Graham DS. Abnormal B Cell Development in Systemic Lupus Erythematosus: What the Genetics Tell Us. Arthritis Rheumatol. 2018 Apr;70(4):496-507.
[3]Li D, Yoshida K, Feldman CH, Speyer C, Barbhaiya M, Guan H, Solomon DH, Everett BM, Costenbader KH. Initial disease severity, cardiovascular events and all-cause mortality among patients with systemic lupus erythematosus. Rheumatology (Oxford). 2020 Mar 1;59(3):495-504.
[4]Bechler KK, Stolyar L, Steinberg E, Posada J, Minty E, Shah NH. Predicting patients who are likely to develop Lupus Nephritis of those newly diagnosed with Systemic Lupus Erythematosus. AMIA Annu Symp Proc. 2023 Apr 29;2022:221-230.


CARIBOU
BIOSCIENCES®
April 4, 2024
Caribou Biosciences Expands Clinical Development of CB-010 with FDA Clearance of IND in Lupus

Forward-looking statements

All statements in this presentation, other than statements of historical facts, are forward-looking statements, within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements speak only as of the date of this presentation and are subject to a number of known and unknown risks, assumptions, uncertainties, and other factors that may cause the actual results, levels of activity, performance, or achievements of Caribou Biosciences, Inc. (the "Company," "Caribou," "we," or "our") to be materially different from those expressed or implied by any forward-looking statements. The words "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 are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. All statements, other than statements of historical facts contained in this presentation, are forward-looking statements, including but not limited to any statements regarding the initiation, timing, progress, strategy, plans, objectives, expectations (including as to the results) with respect to our product candidate preclinical studies, clinical trials, and research programs, including our expectations and timing regarding the release of dose expansion clinical data, and emerging translational data from our ongoing ANTLER phase 1 clinical trial for our CB-010 product candidate, disclosure of the recommended Phase 2 dose for CB-010, and an updated timeline for our planned phase 3 pivotal trial for CB-010 in second line LBCL patients; the status, progress, and expectations relating to the timing of release of clinical data from our ongoing CaMMouflage phase 1 clinical trial for our CB-011 product candidate; the status, progress, and expectations relating to the timing of release of clinical data from our ongoing AMpLify phase 1 clinical trial for our CB-012 product candidate; the timing for the initiation of our GALLOP phase 1 clinical trial for adults with lupus nephritis and extrarenal lupus; our ability to successfully develop our product candidates and to obtain and maintain regulatory approval for our product candidates; the number and type of diseases, indications, or applications we intend to pursue for our product candidates; the beneficial characteristics, safety, efficacy, therapeutic effects, and potential advantages of our product candidates; the expected timing or likelihood of regulatory filings and approval for our product candidates; our expected cash runway; and the sufficiency and anticipated use of our existing capital resources to fund our future operating expenses and capital expenditure requirements and needs for additional financing. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date this presentation is given. This presentation discusses product candidates that are or will be under clinical investigation and that have not yet been approved for marketing by the U.S. Food and Drug Administration. No representation is made as to the safety or effectiveness of these product candidates for the therapeutic uses for which such product candidates are being or will be studied.

As a result of many factors, including risks related to our limited operating history, history of net operating losses, financial position and our ability to raise additional capital as needed to fund our operations and product candidate development; uncertainties related to the initiation, cost, timing, and progress, and results of our current and future research and development programs, preclinical studies, and clinical trials; risks that initial or interim clinical trial data will not ultimately be predictive of the safety and efficacy of our product candidates or that clinical outcomes may differ as more clinical data becomes available; the risk that preclinical study results we observed will not be borne out in human patients; our ability to obtain and maintain regulatory approval for our product candidates; risks that our product candidates, if approved, may not gain market acceptance due to negative public opinion and increased regulatory scrutiny of cell therapies involving genome editing; our ability to meet future regulatory standards with respect to our products; our ability to obtain key regulatory input and approvals, our ability to establish and/or maintain intellectual property rights covering our product candidates and genome-editing technology; risks of third parties asserting that our product candidates infringe their patents; developments related to our competitors and our industry; our reliance on third parties to conduct our clinical trials and manufacture our product candidates; the impact of public health crises and geopolitical events on our business and operations; and other risks described in greater detail in our filings with the Securities and Exchange Commission (the "SEC"), including the section titled "Risk Factors" of our Annual Report on Form 10-K for the year ended December 31, 2023, and other filings we make with the SEC; the events and circumstances reflected in our forward-looking statements may not be achieved or may not occur, and actual results could differ materially from those described in or implied by the forward-looking statements contained in this presentation.

Caution should be exercised when interpreting results from separate trials involving separate product candidates. The results of other CAR-T cell therapies presented or referenced in these slides have been derived from publicly available reports of clinical trials not conducted by us, and we have not performed any head-to-head trials comparing any of these other CAR-T cell therapies with CB-010. As such, the results of these other clinical trials may not be comparable to clinical results for CB-010. The design of these other trials vary in material ways from the design of the clinical trials for CB-010, including with respect to patient populations, follow-up times, the clinical trial phase, and subject characteristics. As a result, cross-trial comparisons may have no interpretive value on our existing or future results. For further information and to understand these material differences, you should read the reports for the other companies' clinical trials and the sources included in this presentation.

In light of the foregoing, you are urged not to rely on any forward-looking statement in reaching any conclusion or making any investment decision about our securities. The forward-looking statements in this presentation are made only as of the date hereof. Except to the extent required by law, the Company assumes no obligation and does not intend to update any of these forward-looking statements after the date of this presentation or to conform these statements to actual results or revised expectations. From time to time, we may release additional clinical data from its ongoing ANTLER phase 1 clinical trial, its CaMMouflage phase 1 clinical trial, and its AMpLify phase 1 clinical trial. We make no representations regarding such additional clinical data or the timing of its release, or whether any such data will support or contradict the findings of the clinical data reported earlier.

This presentation shall not constitute an offer to sell or the solicitation of an offer to buy any securities.

Caribou's partners in lupus

"Lupus is a complex, chronic, heterogeneous autoimmune disease impacting millions of people worldwide, often causing debilitating outcomes. There is a pressing need for more innovative therapies that address the underlying causes of lupus while minimizing symptoms and effects of this systemic disease."

Stacie Bell, PhD

Executive vice president, Lupus Therapeutics,
an affiliate of the Lupus Research Alliance

Today's guests

Richard Lafayette, MD

Professor of medicine

Director of glomerular disease center

Stanford University

Mehdi Hamadani, MD

Professor of medicine

Section chief of hematologic malignancies

Investigator for the ANTLER Phase 1 trial

Medical College of Wisconsin

Advancing pipeline of clinical-stage allogeneic CAR-T cell therapies for hematologic malignancies and autoimmune diseases

Program	Clinical trial	Target	Indication	Preclinical	Phase 1	Phase 2	Phase 3	Designations
Hematologic malignancies								
CB-010	ANTLER Dose expansion	CD19	r/r B-NHL					RMAT, Fast Track, Orphan Drug
CB-011	CaMMouflage Dose escalation	BCMA	r/r MM					Fast Track, Orphan Drug
CB-012	AMpLify Dose escalation	CLL-1*	r/r AML					
Autoimmune diseases								
CB-010	GALLOP Site activation	CD19	LN and ERL					

ERL: extrarenal lupus; LN: lupus nephritis, RMAT: Regenerative Medicine Advanced Therapy
*Also known as CD371

CB-010

Allogeneic anti-CD19
CAR-T cell therapy with a
PD-1 knockout for lupus

CARIBOU BIOSCIENCES

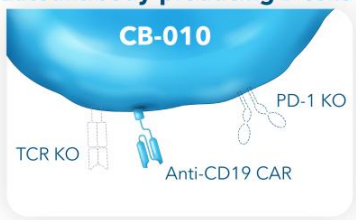
Lupus is a chronic, inflammatory autoimmune disease driven by autoantibody-producing B cells

- Lupus is caused by B cell production of autoantibodies that drive damage of healthy tissue
- Lupus can cause widespread organ damage, increase cardiovascular risk, and significantly impair patient quality of life
- Urgent unmet need for new treatment options that can offer sustained, drug-free remission

[1] Li D, et al. Rheumatology (Oxford). 2020 Mar 1;59(3):495-504.

CB-010 is an allogeneic CAR-T cell therapy that targets autoantibody-producing B cells

Anti-CD19 CAR targets autoantibody-producing B cells



Engineered for improved activity

chRDNA genome editing enables **precision engineering** and **reduced off-target** edits

CB-010 is **engineered with a PD-1 KO[1]** to potentially enhance anti-B cell activity and may drive **sustained remission**

Encouraging clinical data

Encouraging initial safety and efficacy demonstrated for CB-010 in ANTLER Phase 1 trial

ANTLER **B cell depletion is on par** with depletion data published on autologous CAR-T cells in lupus[2]

[1] To Caribou's knowledge, CB-010 is the first allogeneic CAR-T in the clinic with checkpoint disruption via PD-1 KO
[2] Müller F, et al. N Engl J Med. 2024

Donor-derived CAR-T cell therapy precision engineered with chRDNA genome editing technology

CB-010 advantages

- PD-1 KO designed to enhance anti-B cell activity
- No lentiviral or retroviral vectors for genome editing
- Precise insertion of CAR using chRDNA genome-editing technology
- Derived from healthy donor T cells vs. patient T cells exposed to prior treatments
- No patient apheresis or medication wash out needed
- Manufactured in advance, at scale

- Engineered to address disease biology
- Encouraging initial safety and efficacy profile in r/r B-NHL
- Off-the-shelf, readily available, single dose treatment

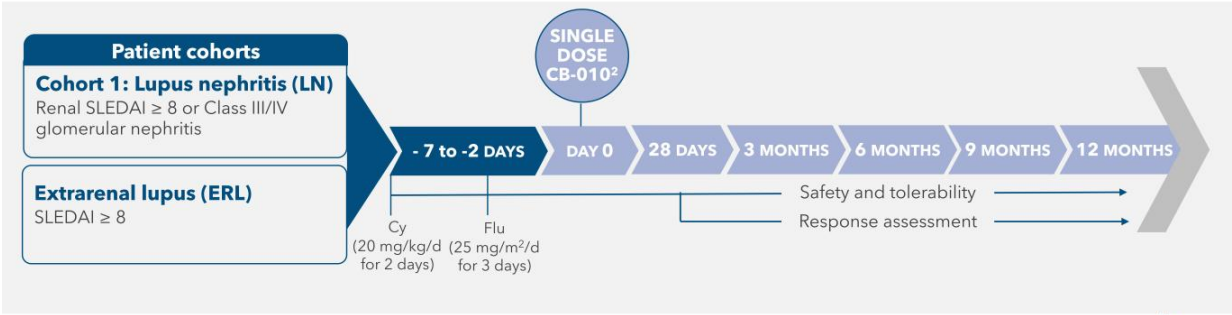
CB-010 GALLOP Phase 1 trial design

Eligibility and matching

- Non-responsive to glucocorticoids and have tried and failed at least 2 defined immunosuppressive therapies
- Excludes cardiac and CNS involvement
- Partial HLA matching and absence of baseline DSAs

Treatment and objective

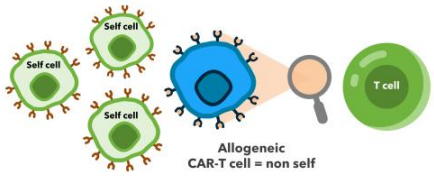
- Single dose level of CB-010 following LD
- Primary endpoint: safety



Cy: cyclophosphamide; DSAs: donor-specific antibodies; Flu: fludarabine; HLA: human leukocyte antigen; LD: lymphodepletion; SLEDAI: Systemic Lupus Erythematosus Disease Activity Index

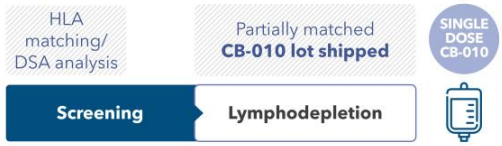
Partial HLA matching to potentially improve patient outcomes

How does HLA matching work?



- Human leukocyte antigens (HLAs) help the immune system identify "self" from "non-self"
- Patient's immune cells recognize allogeneic CAR-T cells as "non-self" and initiate rejection

HLA matching and DSA screening for ANTLER and GALLOP Phase 1 trials



- HLA matching and DSA analysis occur within screening timeline
- Partial HLA matching could result in enhanced outcomes for patients[1]

DSA: donor-specific antibodies
[1]Based on data from the ANTLER Phase 1 trial in r/r B-NHL and to be confirmed in the trials; initial data to be presented at medical congress in Q2 2024


Fireside chat
CARIBOU
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Fireside chat with leaders in rheumatology and oncology

Rachel Haurwitz, PhD

President and chief executive officer

Caribou Biosciences

Richard Lafayette, MD

Professor of medicine

Director of glomerular disease center

Stanford University

Mehdi Hamadani, MD

Professor of medicine

Section chief of hematologic malignancies

Investigator for the ANTLER Phase 1 trial

Medical College of Wisconsin

2024 accomplishments and upcoming milestones

Hematologic malignancies

CB-010 in 2L LBCL

- ○ Present initial ANTLER 2L LBCL dose expansion data, RP2D, translational data — Q2 2024

CB-011 in r/r MM

- ○ Present initial dose escalation data from CaMMouflage trial — YE 2024

CB-012 in r/r AML

- ✓ Dosed first patient in the AMpLify trial

Autoimmune disease

CB-010 in LN and ERL

- ○ Initiate GALLOP trial — YE 2024

Corporate and financial

Well capitalized

- ✓ ~$372M[1] in cash
- ✓ Runway into Q1 2026

[1] $372.4M in cash, cash equivalents, and marketable securities as of December 31, 2023.


Q&A
CARIBOU
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Open to your questions

Rachel Haurwitz, PhD
President and CEO

Steve Kanner, PhD
CSO

Jason O'Byrne
CFO

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VP, medical affairs and project leadership

Richard Lafayette, MD

Professor of medicine

Director of glomerular disease center

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Section chief of hematologic malignancies

ANTLER Phase 1 trial investigator

Medical College of Wisconsin

Thank you

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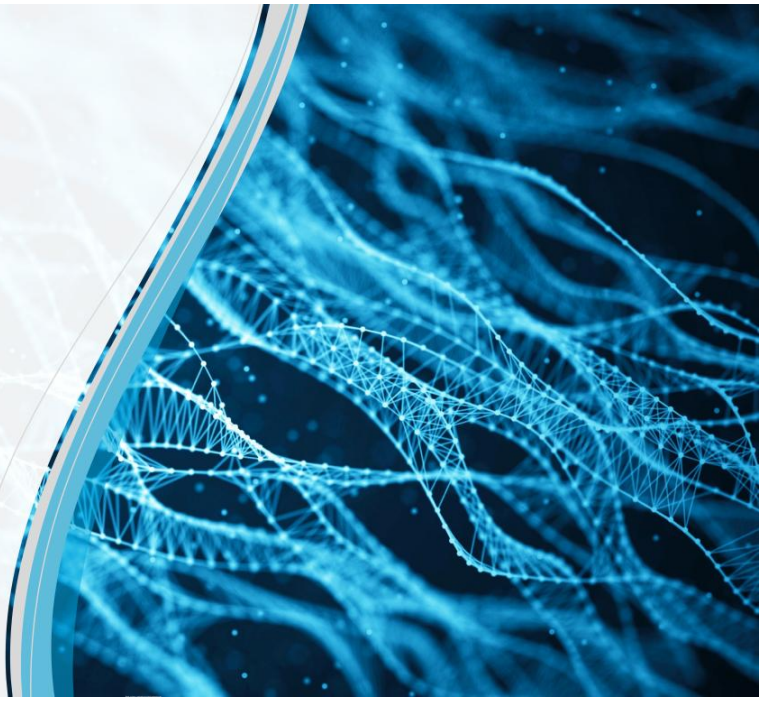

Appendix

With gratitude for patients, caregivers, investigators contributing to CB-010's clinical development

ANTLER Phase 1 trial: 29 active sites in US, Australia, and Israel

Australia
Westmead Hospital
Epworth Hospital

Israel
Hadassah University Hospital
Tel Aviv Sourasky Medical Center
Rabin Medical Center

Alabama
University of Alabama Birmingham (Mehta)

Arizona
HonorHealth Cancer Institute (Kanate)
University of Arizona (Husnain)
Banner MD Anderson (Nath)

California
University of California Irvine (O'Brien)
University of California San Diego (Hamdan)

Florida
Advent Health (Patel)

Georgia
Augusta (Kota)
BMT of Georgia (Sohl)

Iowa
University of Iowa (Farooq)

Kentucky
University of Kentucky (Yalniz)
Norton Cancer Institute (Stevens)

New Jersey
Morristown Memorial Hospital (Cherry)
Hackensack (Feldman)

New York
Montefiore (Kornblum)
NYU Langone (Diefenbach)

Ohio
Oncology Hematology Care (Essell)
Ohio State University (Denlinger)

Pennsylvania
University of Pennsylvania (Nasta)

Texas
Baylor Charles A. Sammons (Holmes)
MD Anderson Cancer Center (Nastoupil)

Utah
Huntsman Cancer Institute (Hu)

Washington
Swedish Cancer Institute (Patel)

Wisconsin
Medical College of Wisconsin (Hamadani)