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): May 12, 2022

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** **(Address of Principal Executive Offices)**	**94710** **(Zip Code)**

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

(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 May 12, 2022, Caribou Biosciences, Inc. (the "Company") issued a press release announcing positive initial clinical data from the ongoing ANTLER Phase 1 clinical trial for its allogeneic anti-CD19 CAR-T cell therapy product candidate, CB-010. A copy of the press release is attached hereto as Exhibit 99.1 and incorporated by reference herein.

Also on May 12, 2022, the Company will host a conference call to discuss the foregoing preliminary data. A copy of the slide presentation to be used during the Company's conference call is attached hereto as Exhibit 99.2 and incorporated by reference herein. Details for accessing the conference call are included in Exhibit 99.1.

The information in Item 7.01 of this Current Report on Form 8-K (including Exhibit 99.1 and Exhibit 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 otherwise subject to the liabilities of that section, nor shall it be, or be deemed, incorporated by reference in any filings under the Securities Act of 1933, as amended (the "Securities Act"), regardless of any general incorporation language in any such filing or document, unless the Company specifically states that the information is to be considered "filed" under the Exchange Act or incorporates it by reference into a filing under the Securities Act or the Exchange Act.

Item 8.01 Other Events.

The Company previously announced that the European Hematology Association ("EHA") accepted an abstract with initial clinical data from the ongoing ANTLER phase 1 clinical trial of its CB-010 product candidate in patients with r/r B-NHL. On May 12, 2022, EHA published the Company's abstract.

The initial data disclosed in the abstract demonstrate that CB-010 had antitumor activity and was generally well-tolerated. As of the February 23, 2022 data cutoff date, six patients had been infused with CB-010 in cohort one at dose level one, and five had completed the 28-day dose-limiting toxicity ("DLT") evaluation period. Among these six patients, there were no cases of graft-versus-host disease. Within the first 28 days, three of six patients developed neutropenia, two of six patients developed thrombocytopenia, one of six patients developed anemia, and one of six patients developed hypogammaglobulinemia. A single patient experienced Grade 1 cytokine release syndrome and Grade 3 immune effector cell-associated neurotoxicity syndrome, which was characterized as a DLT and which resolved with supportive care within 39 hours.

The data demonstrate that, as of the data cutoff date, all five out of five patients evaluable for efficacy responded to CB-010 for an overall response rate of 100% at 28 days following the administration of a single dose of CB-010 (i.e., 40 million CAR-T cells), the starting dose for this phase 1 trial. Four out of five (80%) responding patients achieved a complete response ("CR"). All four patients who achieved a CR at 28 days had an ongoing CR at three months. The longest measured CR was at six months. As of the data cutoff date, one of the CR patients relapsed at their six-month evaluation and the sixth patient was in the 28-day DLT evaluation period. Of the six patients dosed with CB-010 in cohort one, two had diffuse large B cell lymphoma, two had aggressively behaving follicular lymphoma, one had mantle cell lymphoma, and one had primary mediastinal large B cell lymphoma. Based on this initial safety and efficacy profile, the Company's ANTLER phase 1 clinical trial is currently enrolling r/r B-NHL patients in cohort two at dose level two (i.e., 80 million CAR-T cells). At the EHA 2022 Hybrid Congress, to be held in Vienna, Austria, June 9-17, 2022, the Company is scheduled to present the data in the above-referenced abstract as well as additional data on a longer follow-up on the patients in cohort one that extends beyond the February 23, 2022 data cutoff date.

From time to time, the Company plans to release additional clinical data from its ANTLER phase 1 clinical trial, including at the EHA 2022 Hybrid Congress and by year-end, as it continues its ANTLER phase 1 clinical trial. Investors should consider that additional clinical data may be released from time to time, and the Company makes no representation regarding such clinical data or the timing of its release, or whether any such additional clinical data will support or contradict the findings in the initial clinical data reported in the abstract. Initial or interim clinical trial data is subject to the risk that it will not ultimately be predictive of the safety and efficacy of the Company's product candidates and that clinical outcomes may differ as more and longer-term clinical data become available. For example, the preliminary clinical data for CB-010 reported on May 12, 2022 is based on a limited number of patients (six patients in total), has a cutoff date of February 23, 2022, and is subject to risks, including that one or more of the clinical outcomes may materially and adversely change as patients continue on study, dose levels change, patient enrollment continues, and further and longer-term data (including, with respect to efficacy, duration of response, and safety) become available. For example, one of the patients who achieved a CR in cohort one had progressive disease at their six-month evaluation prior to the February 23, 2022 data cutoff date, and further data (including longer-term clinical data) may show additional instances of relapses and other adverse results. As a result, topline data should be viewed with caution until final clinical data are available from the ANTLER trial.

The information the Company discloses publicly regarding a clinical trial is typically a summary of extensive information. For more information regarding the risks relating to initial or interim data from the Company's current and future clinical trials, please see the risk factors in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 and in other filings the Company makes with the Securities and Exchange Commission.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Description
99.1	Press Release dated May 12, 2022
99.2	CB-010 Clinical Program Update Presentation dated May 12, 2022
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

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

CARIBOU BIOSCIENCES, INC.

Date: May 12, 2022

By: /s/ Rachel E. Haurwitz

Rachel E. Haurwitz
President & Chief Executive Officer

Exhibit 99.1

Caribou Biosciences Announces Positive Initial Data for CB-010 Anti-CD19 Allogeneic CAR-T Cell Therapy

-- 100% ORR (5 of 5 patients) and 80% CR (4 of 5 patients) achieved following 1 dose at the initial dose level in patients with aggressive r/r B-NHL --

-- CB-010 is the 1st allogeneic CAR-T cell therapy to achieve 100% ORR (5 of 5 patients) --

-- Based on promising initial safety profile, ANTLER Phase 1 trial enrolling patients at dose level 2 --

-- CB-010 is the 1st allogeneic CAR-T cell therapy in the clinic with a PD-1 knockout, a genome-editing strategy designed to improve the persistence of antitumor activity --

-- Caribou webcast conference call planned for today at 10:15 am ET –

-- Initial data scheduled to be shared at the European Hematology Association (EHA) 2022 Congress; additional ANTLER data expected by YE 2022 --

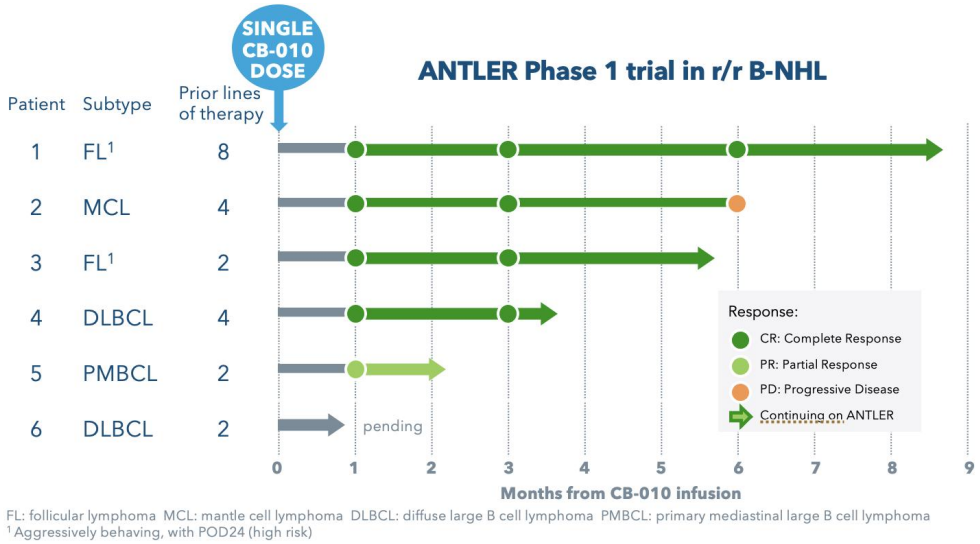
BERKELEY, CA, May 12, 2022 – Caribou Biosciences, Inc. (Nasdaq: CRBU), a leading clinical-stage CRISPR genome-editing biopharmaceutical company, today announced initial results demonstrating a 100% overall response rate (ORR) and 80% complete response rate (CR) in cohort 1 (n=5 evaluable) from its ANTLER Phase 1 trial for CB-010 in patients with relapsed or refractory B cell non-Hodgkin lymphoma (r/r B-NHL). These initial data are scheduled to be shared at the European Hematology Association (EHA) 2022 Hybrid Congress, being held in Vienna, Austria, June 9-17, 2022.

“Our initial CB-010 data are exciting, and we believe these results show the potential to set a new therapeutic bar in treating patients with aggressive r/r B-NHL. These excellent initial outcomes represent important steps toward validating our chRDNA genome-editing platform as well as our plans for future development of CB-010 and our broader pipeline,” said Rachel Haurwitz, Ph.D., Caribou’s president and chief executive officer. “CB-010 is the first allogeneic anti-CD19 CAR-T cell therapy in the clinic with a PD-1 knock-out, a genome-editing strategy designed to limit premature CAR-T cell exhaustion, potentially leading to better tumor debulking and an improved therapeutic index through sustained antitumor activity. We are slated to present additional ANTLER interim data at EHA next month and expect more data by year end as we continue to advance our lead program. Our overarching goal is to develop CB-010 such that it will meaningfully rival autologous cell therapies to reach broader groups of patients globally who are in need of off-the-shelf treatments.”

“We are excited to see a 100% overall response rate with CB-010 at dose level 1 for these patients who have limited treatment options,” said Syed Rizvi, M.D., Caribou’s chief medical officer. “We believe this initial level of activity is unparalleled for a single, starting dose of cell therapy. CB-010 was generally well-tolerated with adverse events routinely observed in autologous or allogeneic anti-CD19 CAR-T cell therapies. At EHA next month, we are scheduled to share longer follow up data from the patients in Cohort 1 who received a single administration of CB-010 at the first dose level. We look forward to continuing the development of our pipeline of allogeneic CAR-T cell therapies for patients with hematologic malignancies.”

The EHA abstract includes safety, tolerability, and initial antitumor activity of CB-010 administered at dose level 1 ($40x10^6$ CAR-T cells) to 6 patients with r/r B-NHL who had relapsed after previous treatment with a median of 3 prior therapies (range 2-8). Prior to a single dose of CB-010, patients received a lymphodepletion regimen consisting of cyclophosphamide at 60 mg/kg/d for 2 days followed by fludarabine at 25 mg/m2/d for 5 days.

As of the February 23, 2022 data cutoff date, 6 patients had been treated with CB-010 and 5 had completed the 28-day dose-limiting toxicity (DLT) evaluation period. 100% (n=5) achieved a response; 80% (n=4) achieved a CR, and 20% (n=1) achieved a partial response (PR). All 4 patients who achieved a CR at 28 days had an ongoing CR at 3 months. The longest measured CR as of the data cutoff date was 6 months.



Footnote: data cutoff date of February 23, 2022, data collection ongoing, efficacy based on Lugano criteria

Following treatment with CB-010, there were no cases of graft versus host disease. 3 of 6 patients developed Grade 3 or 4 adverse events (AEs) within the first 28 days: neutropenia (50%), thrombocytopenia (33%), anemia (17%), and hypogammaglobulinemia (17%). One patient experienced Grade 1 CRS (17%) and Grade 3 ICANS (17%), which was characterized as a DLT, for which the patient received tocilizumab and steroids and recovered from the DLT within 39 hours. This patient went on to achieve a CR.

Based on promising initial safety and efficacy data from cohort 1 at dose level 1 ($40x10^6$ CAR-T cells), the ANTLER trial is now enrolling patients in cohort 2 at dose level 2 ($80x10^6$ CAR-T cells). Additional data are expected by year end.

Details of the poster presentation at EHA are as follows:
Title: First-in-human trial of CB-010, a CRISPR-edited allogeneic anti-CD19 CAR-T cell therapy with a PD-1 knock out, in patients with relapsed or refractory B cell non-Hodgkin lymphoma (ANTLER study)
Abstract: P1455
Presenter: Loretta J. Nastoupil, M.D., section chief, new drug development; associate professor, Department of Lymphoma/Myeloma, The University of Texas MD Anderson Cancer Center
Date and Time: Friday, June 10, 2022, 16:30 – 17:45 CEST (10:30 – 11:45 am ET)
Session Title: Gene therapy, cellular immunotherapy and vaccination - Clinical
Location: Messe Wien Exhibition & Congress Center, Vienna, Austria

Presentations and posters will be available for registered attendees of EHA for on-demand viewing on the EHA website on June 10, 2022 at 9:00 am CEST (3:00 am ET). Caribou plans to issue a press release on the data at 9:00 am CEST (3:00 am ET) on Friday June 10, 2022 and the poster will be available on the Presentations page of the Investors section of Caribou's website.

Webcast Conference Call Today at 10:15 am ET
Caribou will host a webcast conference call today to discuss the initial ANTLER data for CB-010 in the accepted EHA abstract. The webcast presenters will include:

- Rachel Haurwitz, Ph.D., president and chief executive officer of Caribou
- Syed Rizvi, M.D., chief medical officer of Caribou
- Steven Kanner, Ph.D., chief scientific officer of Caribou
- Jason O'Byrne, chief financial officer of Caribou

The live webcast and conference call, with an accompanying presentation, will be accessible under Events in the Investors section of the company's website. To participate in the conference call, dial 844-862-9351 (domestic) or 929-517-0932 (international) and reference conference ID #7589468. The archived audio webcast will be available on Caribou's website following the call and will be available for 30 days.

About CB-010

CB-010 is the lead product candidate from Caribou's allogeneic CAR-T cell therapy platform and is being evaluated in patients with relapsed or refractory B cell non-Hodgkin lymphoma (r/r B-NHL) in the ongoing ANTLER Phase 1 trial. CB-010 is an allogeneic anti-CD19 CAR-T cell therapy engineered using Cas9 CRISPR hybrid RNA-DNA (chRDNA) technology to insert a CD19-specific CAR into the *TRAC* gene and knock out PD-1 to boost the persistence of antitumor activity. CB-010 is the first allogeneic CAR-T cell therapy in the clinic with a PD-1 knock out. Additional information on the ANTLER trial can be found at https://clinicaltrials.gov using identifier NCT04637763.

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 Cas12a chRDNA technology to carry out high efficiency multiple edits, including multiplex gene insertions, 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 proprietary Cas12a chRDNA technology, enables superior precision to develop cell therapies that are specifically engineered for enhanced persistence. Caribou is advancing a pipeline of off-the-shelf CAR-T and CAR-NK cell therapies for the treatment of patients with hematologic malignancies and solid tumors.

Follow us @CaribouBio and visit www.cariboubio.com.

Forward-Looking Statements

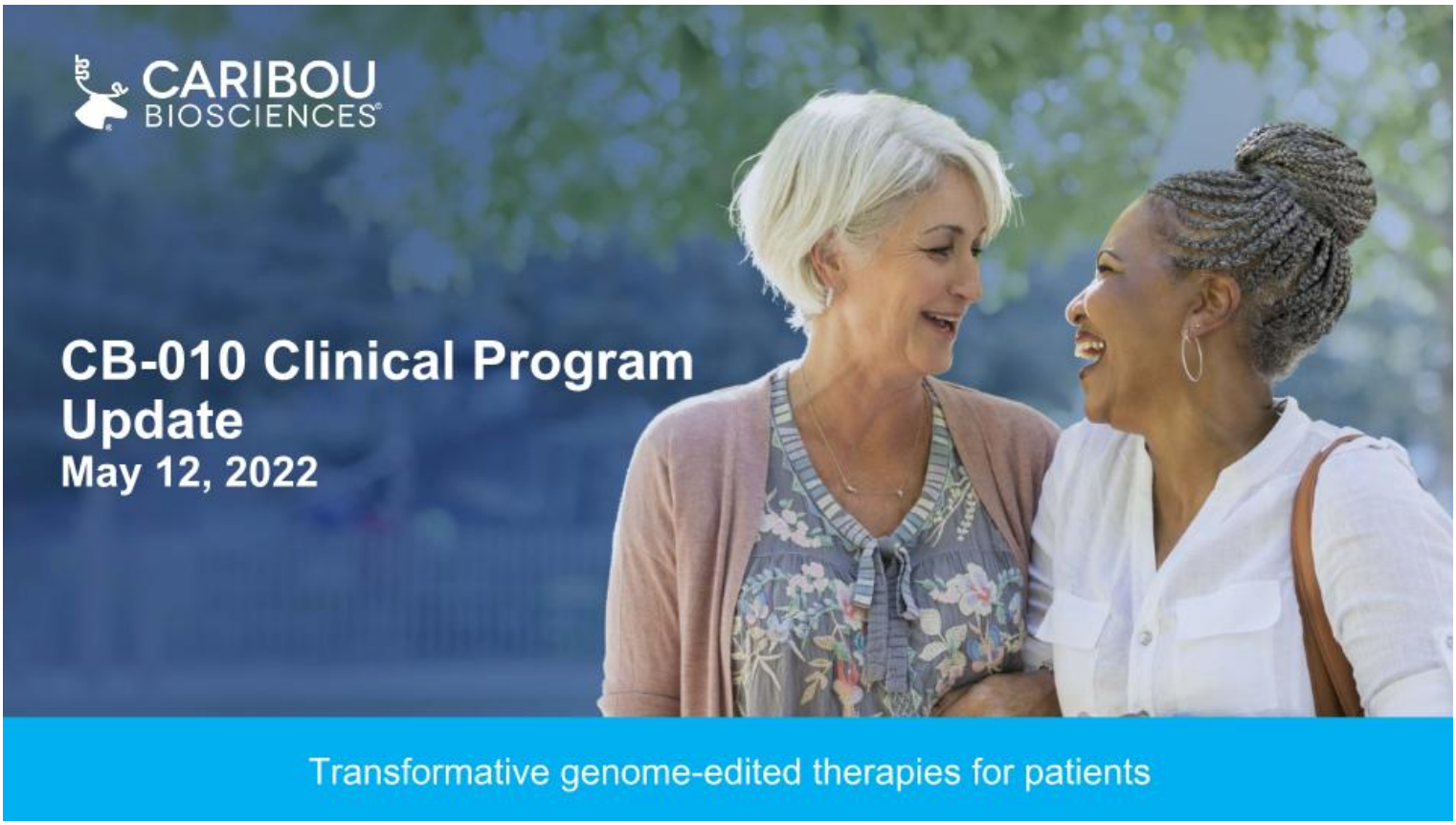
This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, without limitation, statements related to Caribou's strategy, plans, and objectives, and expectations regarding its clinical and preclinical development programs, including its expectations relating to the timing of the release of initial and additional patient data from its ANTLER phase 1 clinical trial for CB-010. 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 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 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 more patient data becomes available; 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, 2021, 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.

Caribou Biosciences, Inc.
Contacts:
Amy Figueroa, CFA
Investor Relations and Corporate Communications
afigueroa@cariboubio.com

Investors and Media:
Elizabeth Wolffe, Ph.D., and Sylvia Wheeler
Wheelhouse LSA
lwolffe@wheelhouselsa.com
swheeler@wheelhouselsa.com

-###-


CARIBOU
BIOSCIENCES
CB-010 Clinical Program Update
May 12, 2022
Transformative genome-edited therapies for patients

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, including but not limited to any statements regarding the initiation, timing, progress, strategy, plans, objectives, expectations, and results of our product candidate preclinical studies, clinical trials, and research programs, including our expectations and timing regarding the initial clinical data from our ANTLER phase 1 clinical trial for our CB-010 product candidate; 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; 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; 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 are forward-looking statements. 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.

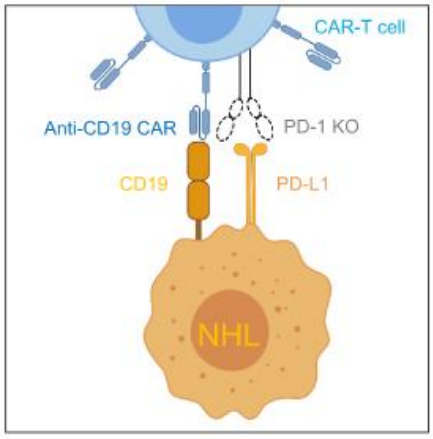
As a result of many factors, including risks related to our limited operating history, history of net operating losses, financial position and our ability to raise additional capital as needed to fund our operations and product candidate development; uncertainties related to the initiation, cost, timing, 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; 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 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 COVID-19 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, 2021, 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.

In light of the foregoing, you are urged not to rely on any forward-looking statement or third-party data in reaching any conclusion or making any investment decision about any securities of the Company. 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.

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

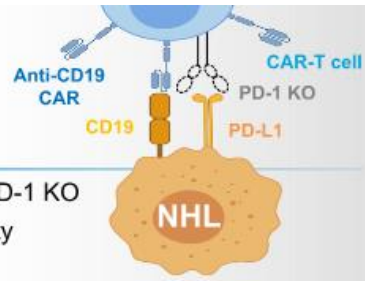
CB-010: anti-CD19 allogeneic CAR-T cell therapy

Key attributes	CB-010	Conventional allo anti-CD19 CAR-Ts
PD-1 KO for enhanced persistence of antitumor activity	▯	X
• Potentially better initial tumor debulking preclinically	▯	X
• Potentially better therapeutic index	▯	X
Site-specific insertion of CAR into *TRAC* locus • Eliminates random integration and reduces risk of GvHD	▯	Varies
Cas9 chRDNA editing for enhanced genomic integrity	▯	X
• Reduced off-target editing and genomic rearrangements	▯	X



Program: CB-010
Tumor antigen: CD19
Healthy donor leukapheresis-derived T cells
Indication: r/r non-Hodgkin lymphoma (NHL)
Status: Phase 1

Revolutionizing allogeneic cell therapies with CB-010: setting a new therapeutic bar



- Caribou believes CB-010 is the **1st allogeneic CAR-T cell therapy** in the clinic with a PD-1 KO
- PD-1 KO genome-editing strategy designed to **improve persistence** of antitumor activity

CB-010: 1st allogeneic CAR-T cell therapy to achieve 100% ORR

Single dose at dose level 1* (N=6)

AT 28 DAYS
5 patients evaluable for efficacy[1]

100% ORR
5/5 patients

80% CR
4/5 patients

r/r B-NHL patients in ANTLER had aggressive disease (median 3 prior treatments)

Generally well tolerated with AEs as expected for autologous/allogeneic anti-CD19 CAR-T cell therapies

Longer duration data from dose level 1 (N=6) slated for EHA; **additional ANTLER data** expected by YE 2022

Enrolling patients at dose level 2† → planning for future development

* $40x10^6$ CAR-T cells ; † $80x10^6$ CAR-T cells
[1] All data as of Feb 23, 2022 data cutoff date, data collection ongoing, efficacy measured by Lugano criteria
Source: Abstract for European Hematology Association (EHA) 2022 Hybrid Congress

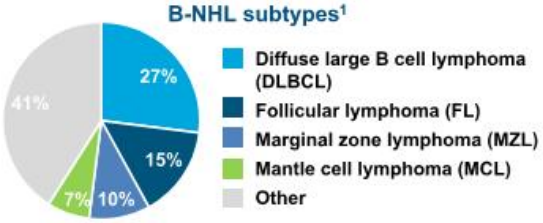
CARIBOU BIOSCIENCES


LEAD PROGRAM CB-010
ANTLER Phase 1 trial
CARIBOU
BIOSCIENCES

r/r B-NHL: high unmet need globally for off-the-shelf cell therapy

- NHL is the most common hematologic malignancy in the U.S.
- Mature B cell lymphomas (B-NHL) are 80-85% of all NHL cases
- ~34% of B-NHL cases are considered relapsed or refractory (r/r)[1]
- Current autologous CAR-T cell therapies have limited patient access with complex manufacturing and high production costs

B-NHL subtypes[1]



Worldwide NHL incidence[2]

US incidence[1]:	EU incidence:	China incidence:	Japan incidence:
~82,900	~101,000	~97,500	~33,600

B-NHL 5-year post-diagnosis survival rates[3]

[1] National Cancer Institute, Leukemia & Lymphoma Society, Lymphoma Research Foundation
[2] Evaluate Pharma, May 2022, www.evaluate.com
[3] Cancer Research U.K.

CARIBOU BIOSCIENCES

CB-010 ANTLER Phase 1 trial design

Patients with aggressive disease

- **r/r B-NHL** (DLBCL, HGBL, tFL, PMBCL, FL[1], MZL[2], MCL)
- ≥2 prior lines of chemoimmunotherapy
- Exclusion: prior CD19-targeted therapy

r/r B-NHL

Part A: 3+3 dose escalation
Part B: expansion at dose determined in part A

DLT: dose-limiting toxicity ORR: objective response rate
[1] Aggressively behaving, with POD24 (high risk)
[2] High grade
[3] Clin Cancer Res. 2011 July 1; 17(13): 4550–4557. doi:10.1158/1078-0432.CCR-11-0116

CARIBOU BIOSCIENCES

ANTLER enrolled difficult-to-treat r/r B-NHL patients

Patient characteristics	Cohort 1 Dose level 1 ($40x10^6$ CAR-T cells) (N=6)
Non-Hodgkin lymphoma subtype:	
DLBCL	2
FL[1]	2
MCL	1
PMBCL	1
Prior treatments	
Median number (range)	3 (2-8)

ANTLER only enrolled patients with aggressive disease

[1] Aggressively behaving, with POD24 (high risk)

Source: Abstract for European Hematology Association (EHA) 2022 Hybrid Congress

CARIBOU BIOSCIENCES

CB-010 generally well tolerated at dose level 1

- No cases of graft versus host disease (GvHD)
- Most AEs were Grade 1 or Grade 2
- No ≥Grade 2 CRS
- Single case of Grade 3 ICANS
  - Case characterized as dose-limiting toxicity
  - Patient received tocilizumab and steroids and recovered within 39 hours

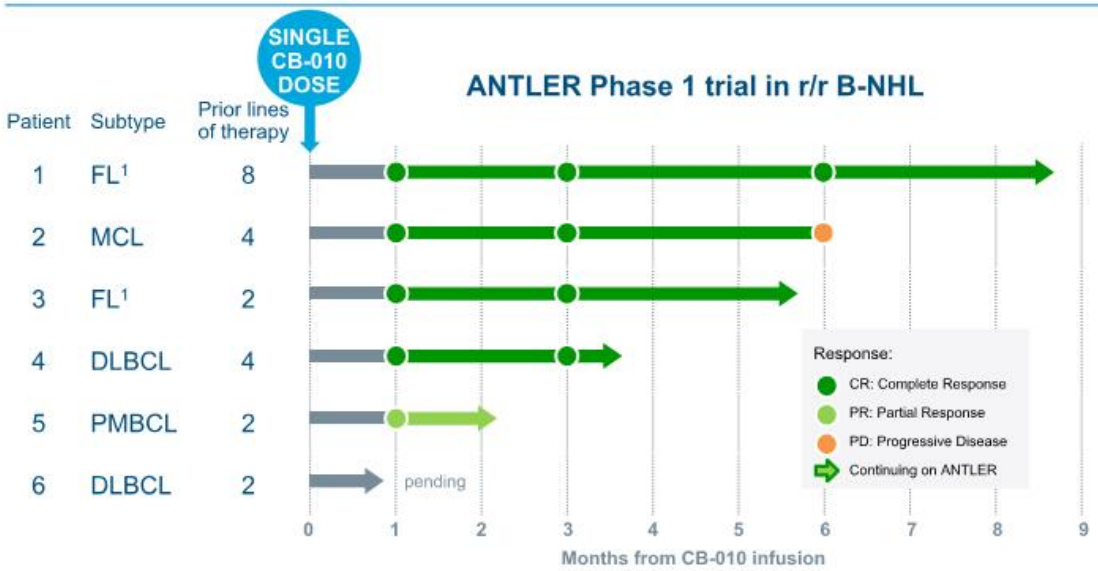
28-day period AEs (Grade 3 or 4)	Cohort 1[1] Dose level 1 ($40x10^6$ CAR-T cells) (N=6)
Neutropenia	3 (50%)
Thrombocytopenia	2 (33%)
Anemia	1 (17%)
Hypogammaglobulinemia	1 (17%)
ICANS	1 (17%)

Adverse events as expected for autologous or allogeneic anti-CD19 CAR-T cell therapies

CRS: cytokine release syndrome ICANS: immune effector cell-associated neurotoxicity syndrome
[1] As of February 23, 2022 data cutoff date, data collection ongoing
Source: Abstract for European Hematology Association (EHA) 2022 Hybrid Congress

CARIBOU BIOSCIENCES

CB-010: 1st allogeneic cell therapy to achieve 100% ORR



6 patients treated with a single infusion at dose level 1 ($40x10^6$ CAR-T cells)

5 patients evaluable for efficacy at 28 days[2]
- 100% (n=5) ORR
- 80% (n=4) CR
- 20% (n=1) PR

Of 4 patients who achieved a CR at 28 days[2]:
- All had ongoing CR at 3 months
- 6 months was longest measured CR

FL: follicular lymphoma MCL: mantle cell lymphoma DLBCL: diffuse large B cell lymphoma PMBCL: primary mediastinal large B cell lymphoma
[1] Aggressively behaving, with POD24 (high risk)
[2] As of February 23, 2022 data cutoff date, data collection ongoing, efficacy based on Lugano criteria
Source: Abstract for European Hematology Association (EHA) 2022 Hybrid Congress

CARIBOU BIOSCIENCES

Pipeline: initial focus on allogeneic cell therapy programs for solid and liquid tumors

Program	Target	Editing	Indications	Discovery	IND enabling	Phase 1	Phase 2	Phase 3[1]	Anticipated milestone
CAR-T platform with cell therapies for hematologic indications									
CB-010	CD19	CAR into TRAC; armoring: PD-1 KO	r/r B-NHL	●	●	●	○	○	initial data scheduled for EHA
CB-011	BCMA	CAR into TRAC; armoring: B2M KO, B2M-HLA-E insertion	r/r MM	●	●	○	○	○	IND submission H2 2022
CB-012	CD371[2]	CAR into TRAC; armoring: undisclosed	r/r AML	●	○	○	○	○	IND submission 2023
CAR-NK platform with iPSC-derived cell therapies for solid tumor indications									
CB-020	undisclosed	armoring: undisclosed	solid tumors	●	○	○	○	○	target selection Q4 2022
AbbVie programs under collaboration agreement[3]									
CAR-T Program 1	undisclosed	undisclosed	undisclosed	●	○	○	○	○	
CAR-T Program 2	undisclosed	undisclosed	undisclosed	●	○	○	○	○	

[1] Phase 3 may not be required if Phase 2 is registrational
[2] Also known as CLL-1
[3] AbbVie has an option to include up to two additional CAR-T cell programs

Initial ANTLER data validate Caribou's chRDNA genome-editing platform

- **100% ORR (80% CR) at 28 days[1] from a single dose of CB-010 at dose level 1 (N=5)**
  1st allogeneic CAR-T cell therapy to achieve 100% ORR (5/5)
  Promising initial safety profile (N=6)
- **Currently enrolling patients in ANTLER Phase 1 trial at dose level 2**
- **Longer duration data scheduled for EHA; additional data expected by YE 2022**
- **Goal to develop CB-010 as an allogeneic cell therapy that can meaningfully rival autologous cell therapies to reach broader groups of patients globally who need off-the-shelf cell therapy**
- **CB-010 is Caribou's lead program and part of a pipeline of precision genome-edited allogeneic CAR-T and CAR-NK cell therapies**
- **Experienced team and capital[2] to execute on our mission**

[1] As of February 23, 2022 data cutoff date, data collection ongoing,efficacy based on Lugano criteria
[2] $391M in cash, cash equivalents, and marketable securities as of March 31, 2022
Source: Abstract for European Hematology Association (EHA) 2022 Hybrid Congress

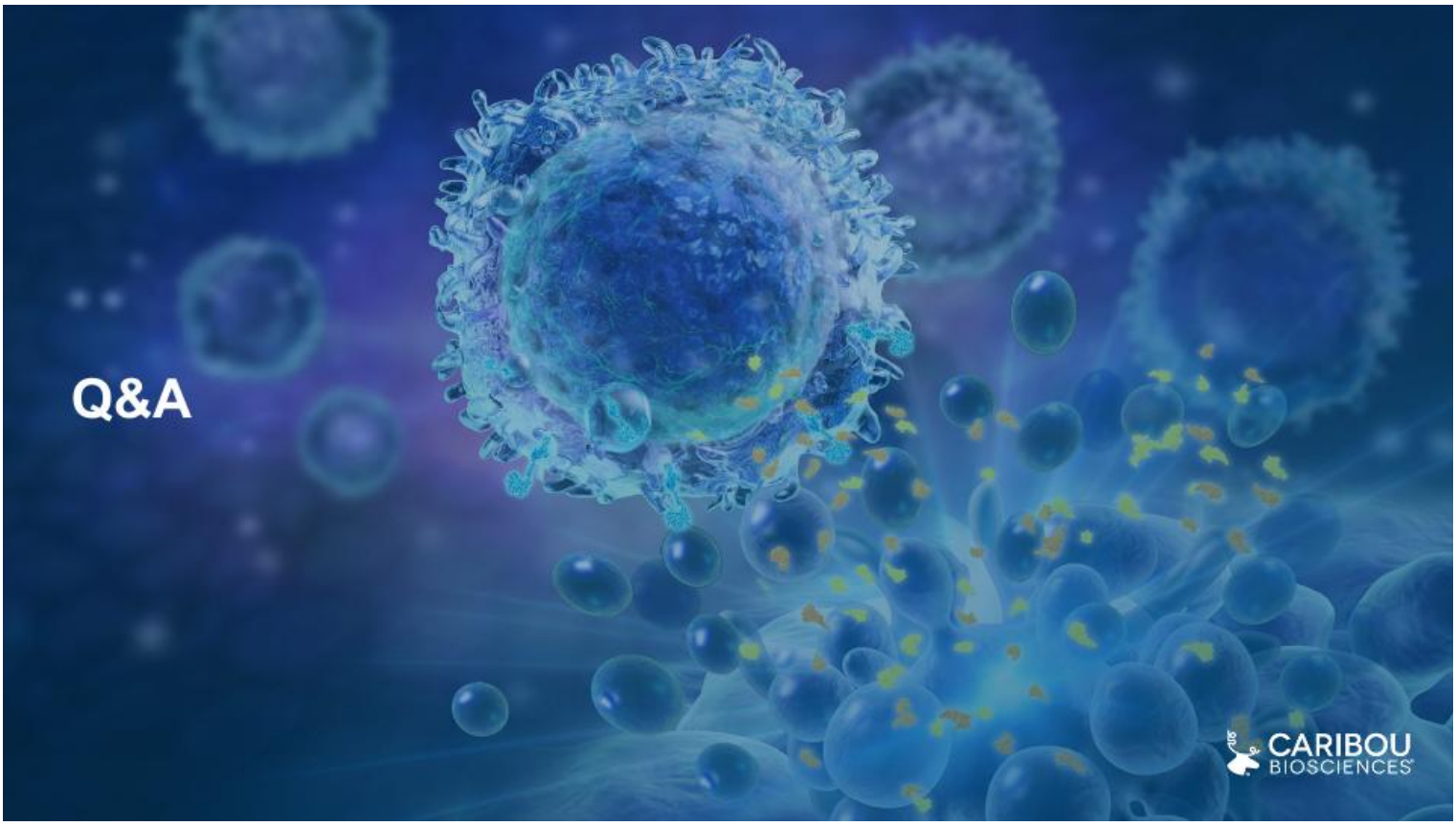
CARIBOU BIOSCIENCES

With gratitude for patients, caregivers, investigators

- **MD Anderson Cancer Center, Houston**
- **Chao Family Comprehensive Cancer Center / University of California Irvine, Orange**
- **Oncology Hematology Care, Cincinnati**
- **Baylor Chares A. Sammons Cancer Center, Dallas**
- **HonorHealth, Scottsdale**
- **University of California San Diego Moores Cancer Center, La Jolla**
- **Additional sites coming soon**

THANK YOU

for your contributions toward Caribou's mission to develop innovative, transformative therapies for patients with devastating diseases through novel genome editing


Q&A
CARIBOU
BIOSCIENCES

See you at EHA in June!

EHA2022
HYBRID JUNE 9-17 VIENNA
Join us live!

Loretta J. Nastoupil, M.D.

Section Chief, New Drug Development

Associate Professor, Department of Lymphoma/Myeloma

The University of Texas MD Anderson Cancer Center

POSTER TITLE

First-in-human trial of CB-010, a CRISPR-edited allogeneic anti-CD19 CAR-T cell therapy with a PD-1 knock out, in patients with relapsed or refractory B cell non-Hodgkin lymphoma (ANTLER study) (Abstract P1455)

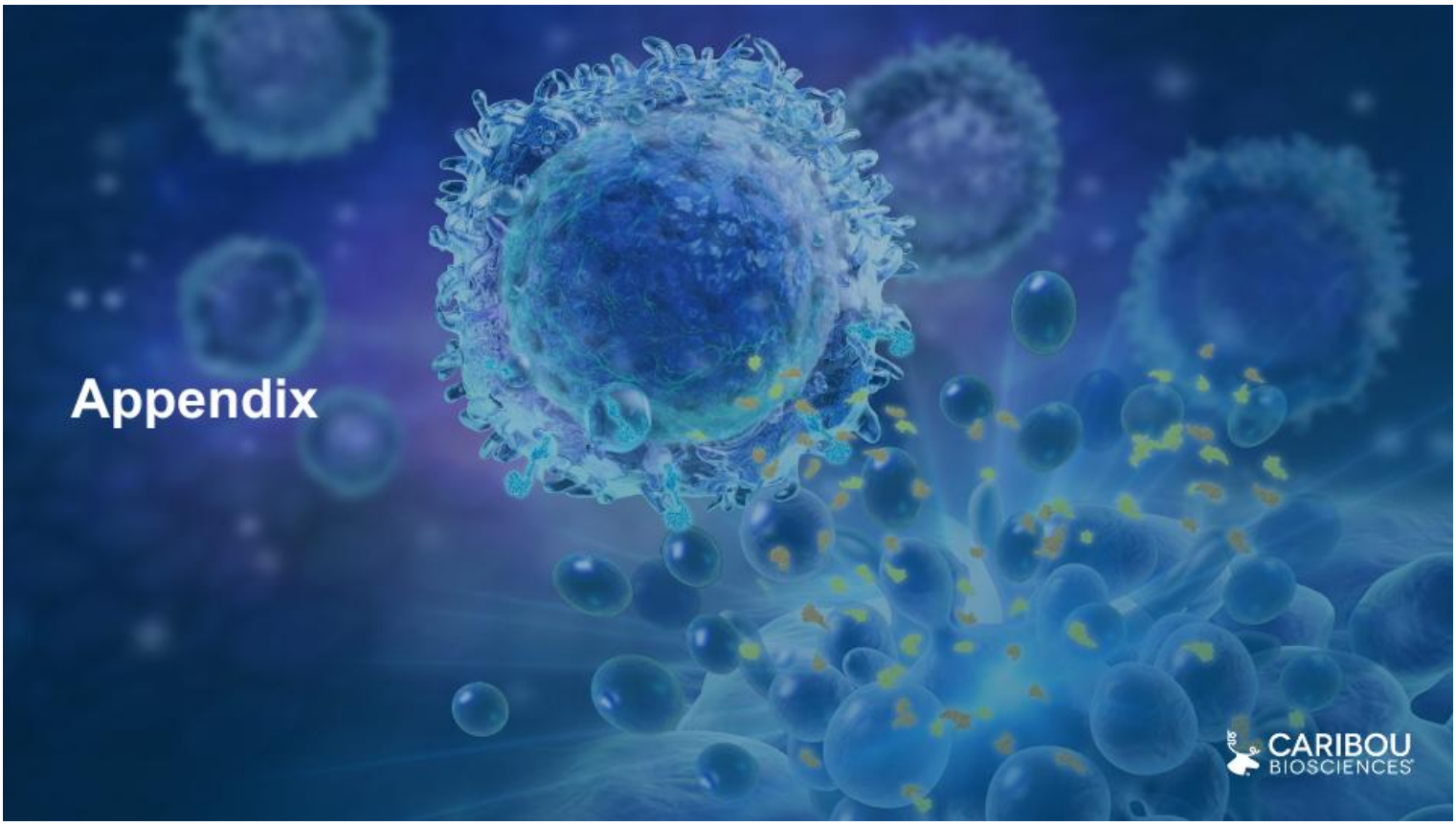
DATE AND TIME

Friday, June 10, 2022
16:30 – 17:45 CEST (10:30 – 11:45 am ET)

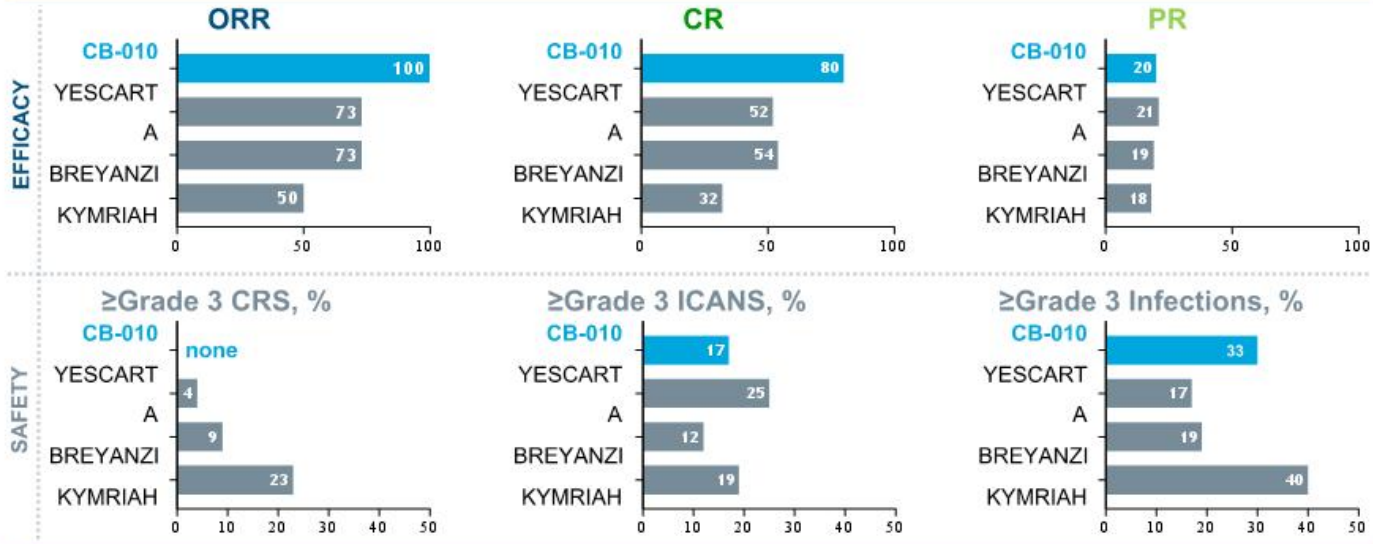
SESSION TITLE

Gene therapy, cellular immunotherapy and vaccination – Clinical

CARIBOU BIOSCIENCES


Appendix
CARIBOU
BIOSCIENCES

CB-010: an allogeneic cell therapy that may rival autologous anti-CD19 cell therapies



CB-010: 40x10^6 CAR-T cells **YESCARTA:** 2x10^6 CAR-T cells/kg **BREYANZI:** 50 to 110x10^6 CAR-T cells **KYMRIAH:** 2.5x10^6 CAR-T cells

Sources: package inserts for YESCARTA, BREYANZI, KYMRIAH
CB-010 Clinical Program Update – 12 May 2022

CARIBOU BIOSCIENCES

Deeper lymphodepletion protocol does not result in 100% ORR in B-NHL patients

Clinical autologous CAR-T cell response rates following intensive LD regimens in B-NHL[1]

LD regimen prior to autologous anti-CD19 CAR-T cell therapy infusion	N=	Objective response rate (ORR)	Complete response (CR) rate
Cy 60 mg/kg/day + Flu 25 mg/kg^2/day x 3-5 days	28	67%	42%

B-NHL: B cell non-Hodgkin lymphoma Cy: cyclophosphamide Flu: fludarabine LD: lymphodepletion

[1] Turtle CJ et al. *Blood*. 2015;126(23):184

Thank you

https://cariboubio.com
info@cariboubio.com