

## Caribou

# CB-010 update confirms impressive response rates; initiating dose expansion

Reiterate Rating: BUY | PO: 23.00 USD | Price: 6.52 USD

## Looking for durability in dose expansion cohorts

After market close on Thursday (7/13), Caribou provided an update on their ongoing phase 1 ANTLER trial. The reported 94% (15/16) overall response rate (ORR) and 69% (11/16) complete response (CR) rate in r/r NHL patients treated with CB-010 largely confirmed impressive data from the initial 6 patients treated at dose-level 1 (40 million CAR-T cells), where a 100% ORR (6/6) and 83% CR (5/6) rate was observed previously (see [our prior CB-010 update note](#)). While response rates are solid, we remain interested in the durability of responses, and think a greater number of patients treated at dose level 2 (80 million cells) or dose level 3 (120 million cells) reaching  $\geq 12$ -month CR would be differentiated. Indeed, we thought it promising that all patients with a CR (3/5) treated with 80 million cells continued to respond for  $\geq 6$  months compared to just half of the patients with an initial CR treated with 40 million cells (4/8 patients, down from 7/8 patients with an initial CR). That said, with so few patients treated at either dose level 2 (5 patients) or dose level 3 (3 patients), dose response trends were unclear. Given the manageable safety profile observed in patients treated at higher dose levels (i.e., no DLTs or grade 3+ CRS) though, we thought it made sense to explore dose expansion with 80 million and 120 million cells despite efficacy observed with 40 million cells. In the dose expansion cohorts, management added that only 2L DLBCL patients will be enrolled, and data will be used to support regulatory discussions. Caribou expects to provide an update on next steps for a potential pivotal study in 2L DLBCL by year-end 2023 and an initial clinical update on the dose expansion cohorts in 1H24. In addition to longer follow-up and more patients treated, we're looking for biomarker data that might support further patient stratification. Maintain Buy, \$23 PO.

## KOL highlights need for an allogeneic CAR-T

While the NHL treatment landscape continues to evolve with bispecifics and autologous CAR-T therapies moving into earlier lines of therapies (see [our ASCO 2023 cell therapy updates](#)), KOL Dr. Nastoupil commented that manufacturing constraints continues to limit the number of patients with access to CAR-T. An effective allogeneic CAR-T would support broader access, and potentially be treatment paradigm-changing.

## Model updates

Separate from Caribou's CB-010 clinical update, we update our model to reflect Pfizer's recent \$25M equity investment and the \$125M public offering announced this morning. Our 2023e EPS is now -1.85 vs prior -2.25.

Estimates (Dec) (US\$)	2021A	2022A	2023E	2024E	2025E
EPS	(2.11)	(1.64)	(1.85)	(1.90)	(2.00)
GAAP EPS	(2.11)	(1.64)	(1.85)	(1.90)	(2.00)
EPS Change (YoY)	47.4%	22.3%	-12.8%	-2.7%	-5.3%
DPS	0	0	0	0	0
Valuation (Dec)					
P/E	NM	NM	NM	NM	NM
GAAP P/E	NM	NM	NM	NM	NM
Dividend Yield	0%	0%	0%	0%	0%
EV / EBITDA*	NM	NM	NM	NM	NM
Free Cash Flow Yield*	-8.7%	-24.4%	-10.0%	-40.1%	-50.4%

\* For full definitions of *IQmethod*<sup>SM</sup> measures, see page 5.

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**Refer to important disclosures on page 6 to 8. Analyst Certification on page 3. Price Objective Basis/Risk on page 3.**

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14 July 2023

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## Stock Data

Price	6.52 USD
Price Objective	23.00 USD
Date Established	12-May-2023
Investment Opinion	C-1-9
52-Week Range	3.96 USD - 13.19 USD
Mkt Val (mn) / Shares Out (mn)	400 USD / 61.4
Average Daily Value (mn)	30.00 USD
BofA Ticker / Exchange	CRBU / NAS
Bloomberg / Reuters	CRBU US / CRBU.OQ
ROE (2023E)	-44.8%
Net Dbt to Eqty (Dec-2022A)	-19.4%
ESGMeter™	NLA

**ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company.** For full details, refer to ["BofA ESGMeter Methodology"](#).

## Abbreviations:

r/r: relapsed and refractory  
CRS: cytokine release syndrome  
DLT: dose-limiting toxicity  
2L: second line  
DLBCL: diffuse large B-cell lymphoma  
NHL: non-Hodgkin lymphoma  
CAR-T: chimeric antigen receptor T-cell therapy  
ASCO: American Society of Clinical Oncology  
KOL: key opinion leader

# iQprofile<sup>SM</sup> Caribou

## iQmethod<sup>SM</sup> – Bus Performance\*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Return on Capital Employed	-27.3%	-25.1%	-36.2%	-45.4%	-53.1%
Return on Equity	-36.7%	-29.0%	-44.8%	-59.1%	-72.3%
Operating Margin	-697.8%	-768.2%	-964.1%	-1,566.8%	-1,645.2%
Free Cash Flow	(35)	(98)	(40)	(160)	(202)

## iQmethod<sup>SM</sup> – Quality of Earnings\*

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash Realization Ratio	NM	NM	NM	NM	NM
Asset Replacement Ratio	2.2x	4.0x	1.9x	1.9x	1.9x
Tax Rate	NM	0.1%	NM	NM	NM
Net Debt-to-Equity Ratio	-62.0%	-19.4%	-76.2%	-58.0%	-48.9%
Interest Cover	NM	NM	NM	NM	NM

## Income Statement Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Sales	10	14	15	12	14
% Change	-22.4%	44.3%	8.3%	-20.0%	16.7%
Gross Profit	10	14	15	12	14
% Change	-22.4%	44.3%	8.3%	-20.0%	16.7%
EBITDA	(66)	(105)	(142)	(185)	(227)
% Change	-87.4%	-58.8%	-36.0%	-30.1%	-22.5%
Net Interest & Other Income	0	7	7	7	8
<b>Net Income (Adjusted)</b>	<b>(67)</b>	<b>(100)</b>	<b>(138)</b>	<b>(181)</b>	<b>(223)</b>
<b>% Change</b>	<b>-95.1%</b>	<b>-49.0%</b>	<b>-38.0%</b>	<b>-31.3%</b>	<b>-23.2%</b>

## Free Cash Flow Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Net Income from Cont Operations (GAAP)	(67)	(100)	(138)	(181)	(223)
Depreciation & Amortization	1	2	2	3	3
Change in Working Capital	29	(4)	11	11	12
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	4	11	89	12	12
Capital Expenditure	(2)	(6)	(4)	(5)	(6)
<b>Free Cash Flow</b>	<b>-35</b>	<b>-98</b>	<b>-40</b>	<b>-160</b>	<b>-202</b>
<b>% Change</b>	<b>-3.3%</b>	<b>-182.1%</b>	<b>59.1%</b>	<b>-300.9%</b>	<b>-25.8%</b>

## Balance Sheet Data (Dec)

(US\$ Millions)	2021A	2022A	2023E	2024E	2025E
Cash & Equivalents	240	58	239	173	156
Trade Receivables	1	0	0	0	0
Other Current Assets	150	202	124	188	241
Property, Plant & Equipment	5	11	13	15	18
Other Non-Current Assets	46	103	34	43	52
<b>Total Assets</b>	<b>442</b>	<b>374</b>	<b>410</b>	<b>419</b>	<b>467</b>
Short-Term Debt	0	0	0	0	0
Other Current Liabilities	26	28	37	47	57
Long-Term Debt	0	0	0	0	0
Other Non-Current Liabilities	29	45	59	74	91
<b>Total Liabilities</b>	<b>55</b>	<b>73</b>	<b>97</b>	<b>121</b>	<b>148</b>
<b>Total Equity</b>	<b>388</b>	<b>301</b>	<b>314</b>	<b>297</b>	<b>318</b>
<b>Total Equity &amp; Liabilities</b>	<b>442</b>	<b>374</b>	<b>410</b>	<b>419</b>	<b>467</b>

\* For full definitions of iQmethod<sup>SM</sup> measures, see page 5.

## Company Sector

Biotechnology

## Company Description

Caribou is a clinical-stage biotech company focused on developing transformative genome-edited allogeneic cell therapies for the treatment of cancer. Caribou is applying its proprietary chrDNA (CRISPER hybrid RNA-DNA) technology for generating off-the-shelf cell therapies with a focus on tumor killing and persistence in the body. The company was founded in 2011 from work conducted by CEO Rachel Haurwitz and co-founder (and Nobel Laureate) Jennifer Doudna.

## Investment Rationale

We are positive on Caribou's differentiated approach to gene editing (potentially superior efficiency, specificity, ease of use) and cell therapy production (allogeneic, streamlined manufacturing), but note the relatively early stage of pipeline development and saturated development for lead targets highlights need for near-term clinical derisking for a better picture of longer-term competitiveness.

## Stock Data

Average Daily Volume 4601,991

## Quarterly Earnings Estimates

	2022	2023
Q1	NAA	NAA
Q2	NAA	NA
Q3	NAA	NA
Q4	NAA	NA

## Price objective basis & risk

### Caribou (CRBU)

Our \$23/share price objective is based on a probability adjusted NPV of CB-010 (\$5/sh), CB-011 (\$4/sh), CB-012 (\$3/sh), CB-020 (\$3/sh), early pipeline and partnerships (\$4/sh), and cash (\$4/sh). We apply a WACC of 11-13% and 3% terminal growth rate, which is comparable to our valuation methodology for other biotech companies of similar size and stage of clinical development.

Downside risks: 1) initial clinical data for pipeline programs fails to demonstrate a meaningful benefit in patients, 2) pipeline therapies fail to differentiate from similar competing products, 3) regulatory/reimbursement environment weighs on commercial economics, 4) patent litigation invalidates or otherwise undermines the IP portfolio, 5) funding is insufficient to move forward pipeline aspirations or manufacturing buildout.

## Analyst Certification

I, Geoff Meacham, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

### US - Biopharmaceuticals Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	89bio, Inc	ETNB	ETNB US	Geoff Meacham
	Acumen Pharma	ABOS	ABOS US	Geoff Meacham
	Agiros Pharmaceuticals	AGIO	AGIO US	Greg Harrison, CFA
	Amylyx Pharmaceuticals	AMLX	AMLX US	Geoff Meacham
	Beam Therapeutics	BEAM	BEAM US	Greg Harrison, CFA
	BioMarin	BMRN	BMRN US	Geoff Meacham
	BioXcel Therapeutics	BTAI	BTAI US	Greg Harrison, CFA
	BridgeBio Pharma	BBIO	BBIO US	Greg Harrison, CFA
	Bristol-Myers Squibb	BMJ	BMJ US	Geoff Meacham
	Caribou	CRBU	CRBU US	Geoff Meacham
	Century Therapeutics	IPSC	IPSC US	Geoff Meacham
	CRISPR Therapeutics	CRSP	CRSP US	Geoff Meacham
	Eli Lilly and Company	LLY	LLY US	Geoff Meacham
	Erasca	ERAS	ERAS US	Alec W. Stranahan
	Esperion	ESPR	ESPR US	Jason Zemansky
	Exscientia	EXAI	EXAI US	Alec W. Stranahan
	Galecto	GLTO	GLTO US	Alec W. Stranahan
	Gossamer Bio, Inc.	GOSS	GOSS US	Greg Harrison, CFA
	Homology	FIXX	FIXX US	Jason Zemansky
	HUTCHMED	HCM	HCM US	Alec W. Stranahan
	IGM Biosciences	IGMS	IGMS US	Geoff Meacham
	Immatics	IMTX	IMTX US	Alec W. Stranahan
	Insmid Incorporated	INSM	INSM US	Jason Zemansky
	Intellia Therapeutics	NTLA	NTLA US	Greg Harrison, CFA
	Janux Therapeutics	JANX	JANX US	Geoff Meacham
	Kiniksa Pharmaceuticals, Ltd.	KNSA	KNSA US	Geoff Meacham
	Krystal Biotech	KRYS	KRYS US	Alec W. Stranahan
	Kymera Therapeutics	KYMR	KYMR US	Geoff Meacham
	LianBio	LIAN	LIAN US	Geoff Meacham
	Liquidia Corporation	LQDA	LQDA US	Greg Harrison, CFA
	Lyell Immunopharma	LYEL	LYEL US	Geoff Meacham



**US - Biopharmaceuticals Coverage Cluster**

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	MeiraGTx	MGTX	MGTX US	Alec W. Stranahan
	Merck & Co.	MRK	MRK US	Geoff Meacham
	Mineralys Therapeutics	MLYS	MLYS US	Greg Harrison, CFA
	PMV Pharmaceuticals	PMVP	PMVP US	Greg Harrison, CFA
	Poseida Therapeutics	PSTX	PSTX US	Alec W. Stranahan
	Rani Therapeutics	RANI	RANI US	Geoff Meacham
	Regenxbio, Inc.	RGNX	RGNX US	Alec W. Stranahan
	Reneo Pharmaceuticals	RPHM	RPHM US	Jason Zemansky
	Rocket Pharmaceuticals, Inc.	RCKT	RCKT US	Greg Harrison, CFA
	Royalty Pharma	RPRX	RPRX US	Geoff Meacham
	Sana Biotechnology	SANA	SANA US	Geoff Meacham
	Senti Biosciences	SNTI	SNTI US	Greg Harrison, CFA
	SpringWorks	SWTX	SWTX US	Alec W. Stranahan
	Traverse Therapeutics Inc	TVTX	TVTX US	Greg Harrison, CFA
	Tyra Biosciences	TYRA	TYRA US	Geoff Meacham
	Vaxxinity	VAXX	VAXX US	Geoff Meacham
	Vertex Pharmaceuticals Inc.	VRTX	VRTX US	Geoff Meacham
	Vir	VIR	VIR US	Geoff Meacham
	Werewolf Therapeutics	HOWL	HOWL US	Jason Zemansky
	Xencor	XNCR	XNCR US	Alec W. Stranahan

**NEUTRAL**

	AbbVie	ABBV	ABBV US	Geoff Meacham
	Alector, Inc	ALEC	ALEC US	Greg Harrison, CFA
	Arcus Biosciences	RCUS	RCUS US	Jason Zemansky
	Biogen Inc.	BIIB	BIIB US	Geoff Meacham
	Cytokinetics, Incorporated	CYTK	CYTK US	Jason Zemansky
	Editas Medicine	EDIT	EDIT US	Greg Harrison, CFA
	Gilead Sciences Inc.	GILD	GILD US	Geoff Meacham
	Johnson & Johnson	JNJ	JNJ US	Geoff Meacham
	Moderna	MRNA	MRNA US	Geoff Meacham
	Pfizer	PFE	PFE US	Geoff Meacham
	Recursion Pharmaceuticals, Inc.	RXR	RXR US	Alec W. Stranahan
	Revolution Medicines	RVMD	RVMD US	Alec W. Stranahan
	Stoke Therapeutics	STOK	STOK US	Greg Harrison, CFA
	Y-mAbs Therapeutics, Inc	YMAB	YMAB US	Alec W. Stranahan

**UNDERPERFORM**

	Allakos	ALLK	ALLK US	Jason Zemansky
	CureVac	CVAC	CVAC US	Geoff Meacham
	Day One Biopharmaceuticals	DAWN	DAWN US	Alec W. Stranahan
	Genfit	GNFT	GNFT US	Geoff Meacham
	Graphite Bio	GRPH	GRPH US	Greg Harrison, CFA
	Hookipa Pharma	HOOK	HOOK US	Alec W. Stranahan
	Inovio Pharmaceuticals	INO	INO US	Geoff Meacham
	Intercept Pharmaceuticals	ICPT	ICPT US	Geoff Meacham
	Nektar Therapeutics	NKTR	NKTR US	Greg Harrison, CFA
	NextCure	NXTC	NXTC US	Alec W. Stranahan
	Novavax	NVAX	NVAX US	Alec W. Stranahan
	Omeros	OMER	OMER US	Greg Harrison, CFA
	Puma Biotechnology	PBYI	PBYI US	Geoff Meacham
	Regeneron Pharmaceuticals Inc.	REGN	REGN US	Geoff Meacham
	Sangamo	SGMO	SGMO US	Greg Harrison, CFA
	TG Therapeutics	TGTX	TGTX US	Alec W. Stranahan
	United Therapeutics Corporation	UTHR	UTHR US	Greg Harrison, CFA

**RSTR**

	Amgen Inc.	AMGN	AMGN US	Geoff Meacham
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## **IQmethod<sup>SM</sup> Measures Definitions**

### **Business Performance**

Return On Capital Employed

Return On Equity  
Operating Margin  
Earnings Growth  
Free Cash Flow

### **Quality of Earnings**

Cash Realization Ratio  
Asset Replacement Ratio  
Tax Rate  
Net Debt-To-Equity Ratio  
Interest Cover

### **Valuation Toolkit**

Price / Earnings Ratio  
Price / Book Value  
Dividend Yield  
Free Cash Flow Yield  
Enterprise Value / Sales

EV / EBITDA

### **Numerator**

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income  
Operating Profit  
Expected 5 Year CAGR From Latest Actual  
Cash Flow From Operations – Total Capex

### **Numerator**

Cash Flow From Operations  
Capex  
Tax Charge  
Net Debt = Total Debt – Cash & Equivalents  
EBIT

### **Numerator**

Current Share Price  
Current Share Price  
Annualised Declared Cash Dividend  
Cash Flow From Operations – Total Capex  
EV = Current Share Price × Current Shares + Minority Equity + Net Debt +  
Other LT Liabilities  
Enterprise Value

### **Denominator**

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill  
Amortization  
Shareholders' Equity  
Sales  
N/A  
N/A

### **Denominator**

Net Income  
Depreciation  
Pre-Tax Income  
Total Equity  
Interest Expense

### **Denominator**

Diluted Earnings Per Share (Basis As Specified)  
Shareholders' Equity / Current Basic Shares  
Current Share Price  
Market Cap = Current Share Price × Current Basic Shares  
Sales

Basic EBIT + Depreciation + Amortization

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### Equity Investment Rating Distribution: Health Care Group (as of 30 Jun 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	236	57.84%	Buy	105	44.49%
Hold	87	21.32%	Hold	38	43.68%
Sell	85	20.83%	Sell	22	25.88%

### Equity Investment Rating Distribution: Global Group (as of 30 Jun 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	1877	53.28%	Buy	1040	55.41%
Hold	815	23.13%	Hold	464	56.93%
Sell	831	23.59%	Sell	385	46.33%

<sup>R1</sup> Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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