MD Anderson Cancer Center

Allogeneic CAR-T: Is there a strategy moving forward?

Sattva S. Neelapu, MD
Professor and Deputy Chair
Department of Lymphoma and Myeloma
The University of Texas MD Anderson Cancer Center
Houston, Texas, USA

9th Postgraduate Lymphoma Conference
Florence, Hotel Brunelleschi, March 20-21, 2025

Disclosures

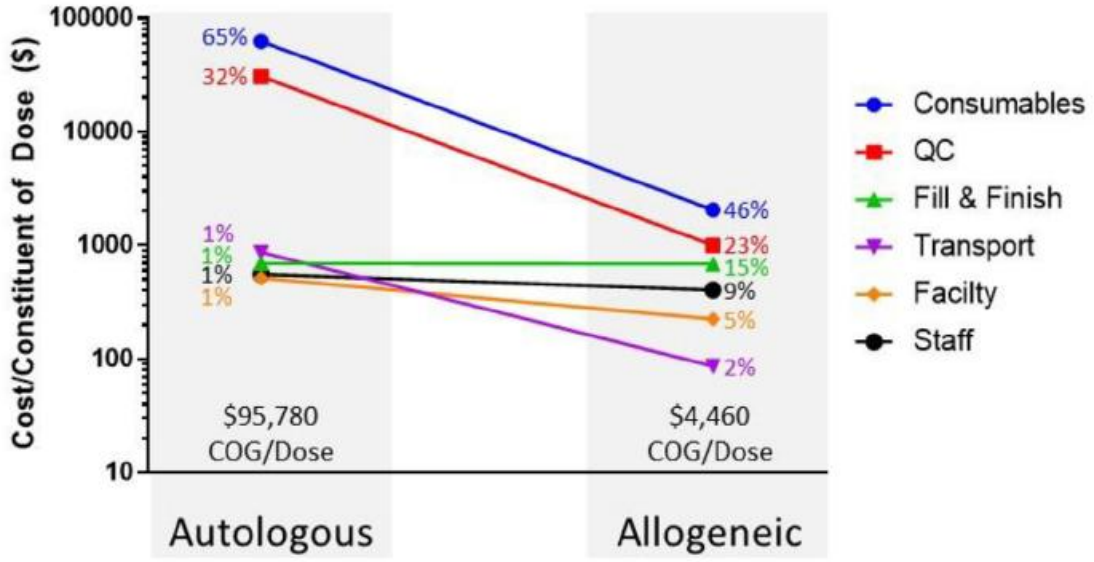
Disclosure	Company name
Research Support	Kite/Gilead, Allogene, Precision Biosciences, Adicet Bio, Sana Biotechnology, Cargo Therapeutics
Advisory Board / Consultant	Kite/Gilead, Sellas Life Sciences, Allogene, Adicet Bio, BMS, Fosun Kite, Caribou, Astellas Pharma, Morphosys, Janssen, Chimagen, ImmunoACT, Takeda, Synthekine, Carsgen, Appia Bio, GlaxoSmithKline, Galapagos, ModeX Therapeutics, Jazz Pharmaceuticals, ADC Therapeutics, BioOra Limited, Arovella Therapeutics, Merck, Pfizer, Poseida
Honoraria	MJH Life Sciences, PeerView, MD Education
Speaker's Bureau	None
Employment	None
Royalties	None
Stocks / Stock Options	None
Patents	Related to cell therapy

- I will discuss investigational use of CAR T-cell therapy

Advantages of allogeneic CAR cell therapy

- Potential for improved efficacy due to improved T-cell fitness
- Consistent product quality
- No wait period as they are off-the-shelf
- Improve access at non-transplant centers
- Potential to lower the cost of CAR T-cell therapy

Cost of goods/dose: Auto vs. Allo



~100 doses/manufacturing run

Harrison et al. *Cytotherapy*, 2019; 21:224-233

Clinical trial publications of allogeneic CAR T/NK cell therapy

SCIENCE TRANSLATIONAL MEDICINE | REPORT

CANCER

Molecular remission of infant B-ALL after infusion of universal TALEN gene-edited CAR T cells

Waseem Qasim,[1,2]* Hong Zhan,[1] Sujith Samarasinghe,[2] Stuart Adams,[2] Persis Amrolia,[1,2] Sian Stafford,[1] Katie Butler,[1] Christine Rivat,[1] Gary Wright,[2] Kathy Somana,[2] Sara Ghorashian,[1] Danielle Pinner,[2] Gul Ahsan,[2] Kimberly Gilmour,[2] Giovanna Lucchini,[2] Sarah Inglott,[2] William Mifsud,[2] Robert Chiesa,[2] Karl S. Peggs,[3] Lucas Chan,[4] Farzin Farzaneh,[4] Adrian J. Thrasher,[1] Ajay Vora,[5] Martin Pule,[3] Paul Veys[1]

Sci Transl Med 2017

Genome-edited, donor-derived allogeneic anti-CD19 chimeric antigen receptor T cells in paediatric and adult B-cell acute lymphoblastic leukaemia: results of two phase 1 studies

*Reuben Benjamin, Charlotte Graham, Deborah Yallop, Agnieszka Jozwik, Oana C Mirci-Danicar, Giovanna Lucchini, Danielle Pinner, Nitin Jain, Hagop Kantarjian, Nicolas Boissel, Marcela V Maus, Matthew J Frigault, André Baruchel, Mohamad Mohty, Athos Gianella-Borradori, Florence Binlich, Svetlana Balandraud, Fabien Vitry, Elisabeth Thomas, Anne Philippe, Sylvain Fouliard, Sandra Dupouy, Ibtissam Marchiq, Maria Almena-Carrasco, Nicolas Ferry, Sylvain Arnould, Cyril Konto, Paul Veys, Waseem Qasim, for the UCART19 Group**

Lancet 2020

Allogeneic CAR T Cell Products Cemacabtagene Ansegedleucel/ALLO-501 in Relapsed/Refractory Large B-Cell Lymphoma: Phase 1 Experience From the ALPHA2/ALPHA Clinical Studies

Authors: Frederick L. Locke, Javier L. Munoz, Michael T. Tees, Lazaros J. Lekakis, Sven de Vos, Rajneesh Nath, Don A. Stevens, Shahbaz A. Malik, Geoffrey P. Shouse, Mehdi Hamadani, Olalekan O. Oluwole, Miguel-Angel Perales, David B. Miklos, Paul W. Fisher, Amy Feng, Lynn Navale, John B. Le Gall, and Sattva S. Neelapu SHOW FEWER | AUTHORS INFO & AFFILIATIONS

Publication: Journal of Clinical Oncology • Just Accepted • https://doi.org/10.1200/JCO-24-01933

J Clin Oncol 2025

Use of CAR-Transduced Natural Killer Cells in CD19-Positive Lymphoid Tumors

Enli Liu, M.D., David Marin, M.D., Pinaki Banerjee, Ph.D., Homer A. Macapinlac, M.D., Philip Thompson, M.B., B.S., Rafet Basar, M.D., Lucila Nassif Kerbauy, M.D., Bethany Overman, B.S.N., Peter Thall, Ph.D., Mecit Kaplan, M.S., Vandana Nandivada, M.S., Indresh Kaur, Ph.D., Ana Nunez Cortes, M.D., Kai Cao, M.D., May Daher, M.D., Chitra Hosing, M.D., Evan N. Cohen, Ph.D., Partow Kebriaei, M.D., Rohtesh Mehta, M.D., Sattva Neelapu, M.D., Yago Nieto, M.D., Ph.D., Michael Wang, M.D., William Wierda, M.D., Ph.D., Michael Keating, M.D., Richard Champlin, M.D., Elizabeth J. Shpall, M.D., and Katayoun Rezvani, M.D., Ph.D.

N Eng J Med 2020

Induced pluripotent stem-cell-derived CD19-directed chimeric antigen receptor natural killer cells in B-cell lymphoma: a phase 1, first-in-human trial

Armin Ghobadi, Veronika Bachanova, Krish Patel, Jae H Park, Ian Flinn, Peter A Riedell, Carlos Bachier, Catherine S Diefenbach, Carol Wong, Cara Bickers, Lilly Wong, Deepa Patel, Jode Goodridge, Matthew Denholt, Bahram Valamehr, Rebecca L Elstrom, Paolo Strati

Lancet 2025

Safety and activity of CTX130, a CD70-targeted allogeneic CRISPR-Cas9-engineered CAR T-cell therapy, in patients with relapsed or refractory T-cell malignancies (COBALT-LYM): a single-arm, open-label, phase 1, dose-escalation study

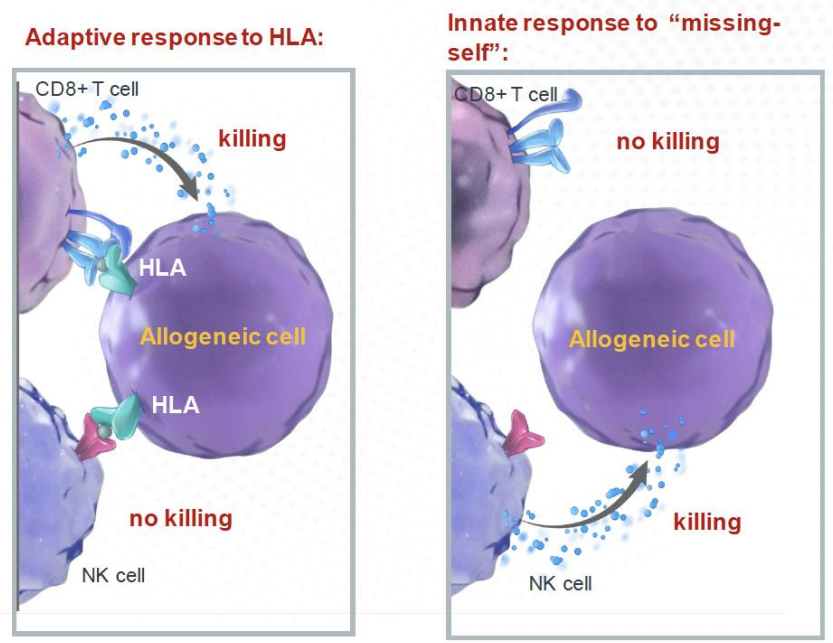
Swaminathan P Iyer, R Alejandro Sica*, P Joy Ho, Anca Prica, Jasmine Zain, Francine M Foss, Boyu Hu, Amer Beitinjaneh, Wen-Kai Weng, Youn H Kim, Michael S Khodadoust, Auris O Huen, Leah M Williams, Anna Ma, Elaine Huang, Avanti Ganpule, Shashwat Deepali Nagar, Parin Sripakdeevong, Erika L Cullingford, Sushant Karnik, Mary-Lee Dequeant, Janki N Patel, Xinyi Shirley He, Ziliang Li, Qiuling Ally He, Joy H Mendonez, Alissa Keegan, Steven M Horwitz*

Lancet Oncol 2025

Challenges for allogeneic CAR T-cell therapy

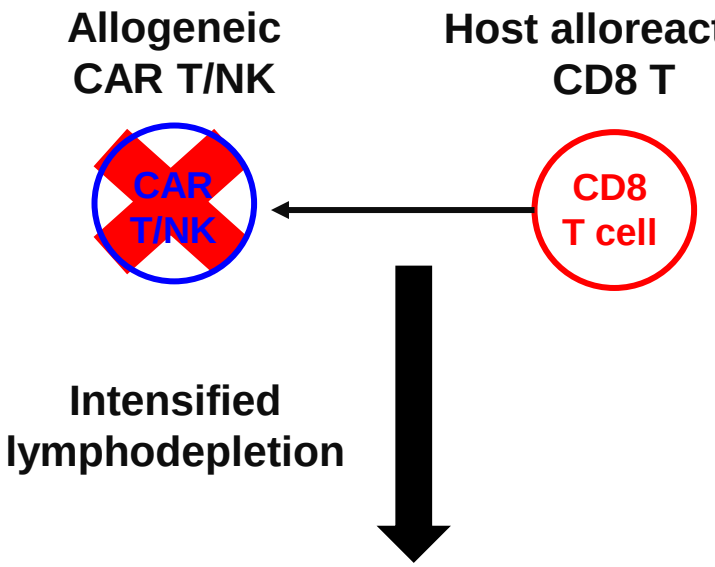
- GVHD
  - Mediated by αβ T cells
  - May be overcome by TCR knock-out or by using alternative cell types such as NK cells, NKT, γδ T cells
- Graft rejection
  - Mediated by αβ T cells and NK cells

Graft rejection by T and NK cells



Depil et al. *Nat Rev Drug Discov*, 2020; 19(3) 185-199
Schrepfer et al, 2022 ASH Annual Meeting, Abstract 1690

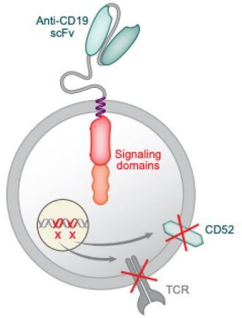
Overcoming immune rejection by intensified lymphodepletion



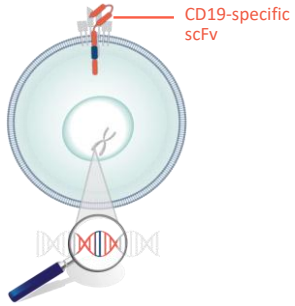
Eliminate host T and NK cells for few weeks to allow allo CAR T cells to expand and mediate antitumor effects

Product / Sponsor	Cell type	CAR Target	Allorejection strategy	Comments
ALLO-501/A Allogene	αβ T cells	CD19	Anti-CD52 Ab + Standard Cy/Flu	TCR KO CD52 KO
PBCAR0191 Precision Bio	αβ T cells	CD19	Enhanced Cy/Flu	TCR KO
CB-010 Caribou Biosciences	αβ T cells	CD19	High-dose Cy/Flu	TCR KO PD1 KO
ADI-001 Adicet Bio	γδ T cells	CD20	Enhanced Cy/Flu	

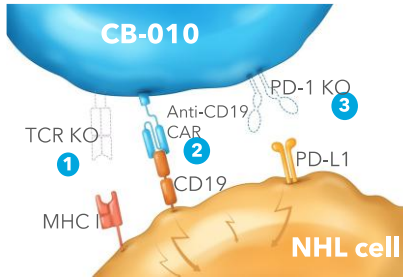
ALLO-501A (Cema-cel)



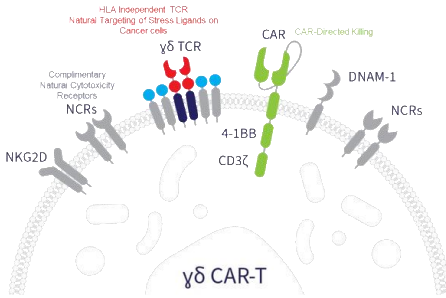
PBCAR0191



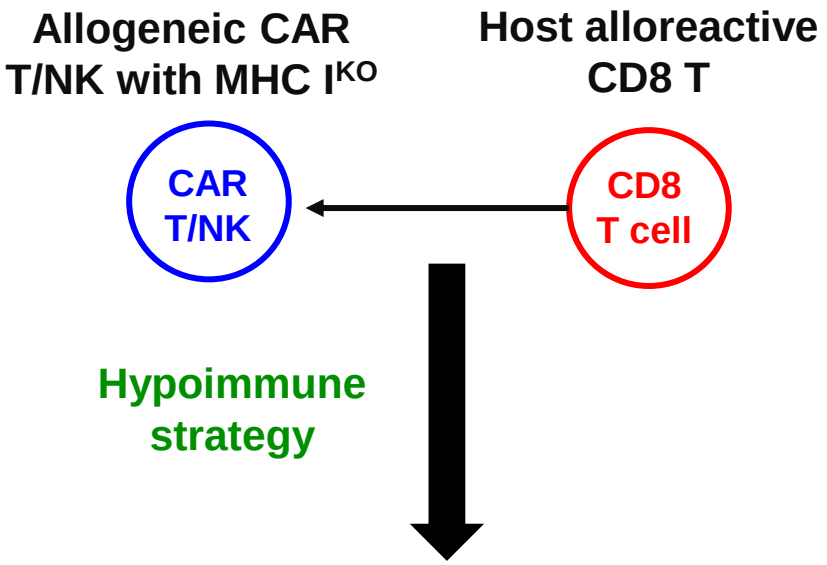
CB-010



ADI-001



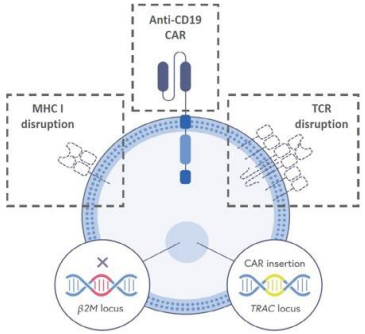
Overcoming immune rejection by hypoimmune strategy



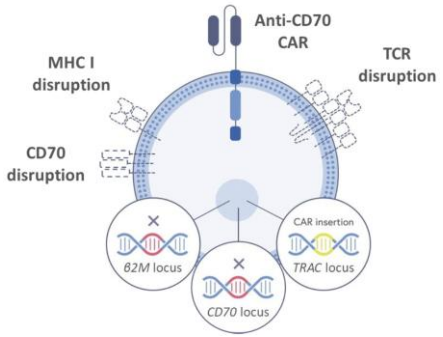
Make donor CAR T/NK cells invisible / hyporeactive to the host immune system

Product / Sponsor	Cell type	CAR Target	Allorejection strategy	Additional comments
CTX110 CRISPR Therapeutics	ab T cells	CD19	B2M KO	Standard Cy/Flu
CTX130 CRISPR Therapeutics	ab T cells	CD70	B2M KO	Standard Cy/Flu CD70 KO
KUR-502 Athenex	iNKT cells	CD19	B2M & CD74 down regulation	Standard Cy/Flu IL-15 transgene

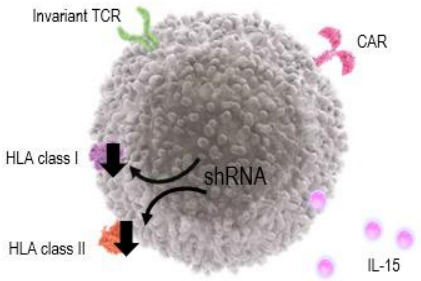
CTX110



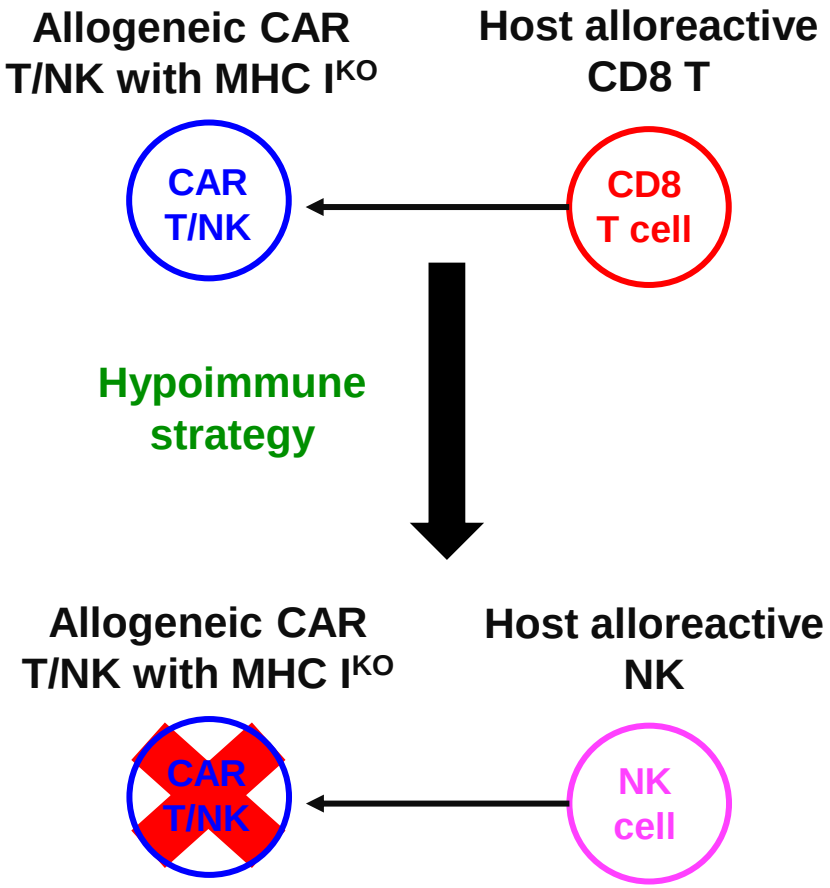
CTX130



KUR-502

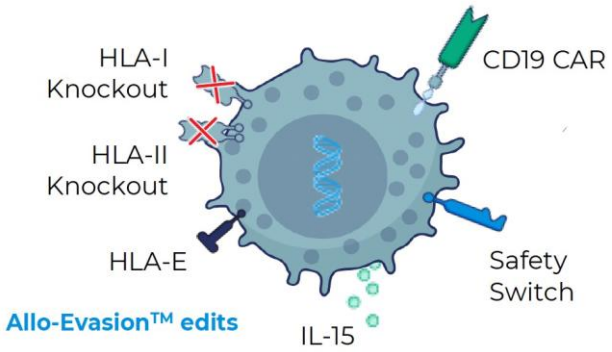


Overcoming immune rejection by hypoimmune strategy

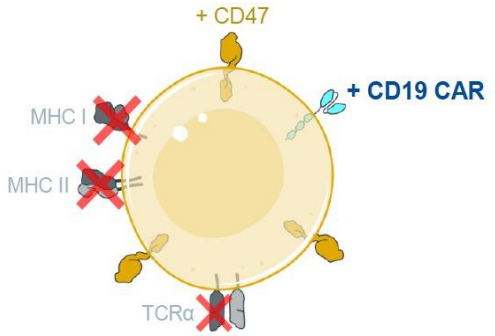


Product / Sponsor	Cell type	CAR Target	Allorejection strategy	Additional comments
CTX110 CRISPR Therapeutics	ab T cells	CD19	B2M KO	Standard Cy/Flu
CTX130 CRISPR Therapeutics	ab T cells	CD70	B2M KO	Standard Cy/Flu CD70 KO
KUR-502 Athenex	iNKT cells	CD19	B2M & CD74 down regulation	Standard Cy/Flu IL-15 transgene
CNTY-101 Century Therapeutics	iPSC CAR NK	CD19	B2M KO, CIITA KO, & HLA-E overexpression	Standard Cy/Flu IL-15 transgene
SC291 Sana Biotechnology	ab T cells	CD19	B2M KO, CIITA KO, & CD47 overexpression	Standard Cy/Flu

CNTY-101



SC291



Auto vs Allo CD19 CAR-T: Safety in r/r ≥3rd line LBCL

	Product	Study	CRS All / Gr ≥3	ICANS All / Gr ≥3	Gr ≥3 cytopenia >30d
Autologous	Axi-cel	ZUMA-1	93 / 11	64 / 30	38
	Tisa-cel	JULIET	57 / 23	20 / 11	34
	Liso-cel	TRANSCEND	42 / 2	30 / 10	37
	Rapa-cel	Phase 1	35 / 6	25 / 6	NA
Allogeneic	ALLO-501A	Phase 1	24 / 0	0 / 0	29
	PBCAR0191	Phase 1	65 / 0	30 / 6	NA
	CB-010	Phase 1 (2nd line)	57 / 0	22 / 7	20
	CTX110	Phase 1	18 / 0	9 / 6	NA

Neelapu SS et al. *N Engl J Med.* 2017;377:2531-2544. Locke FL et al. *Lancet Oncol.* 2019;20(1):31-42: Schuster SJ et al. *N Engl J Med.* 2019;380:45-56. Schuster SJ et al. *Lancet Oncol.* 2021;22(10):1403-1415; Abramson JS et al. *Lancet.* 2020;396(10254):839-852; Locke et al. Neelapu, ASH 2023 Abstract 2095; Shah et al. ASH 2021, Abstract 302; Hu B et al. ASCO 2024 Abstract 2025; McGuirk et al. EBMT 2023

Auto vs Allo CD19 CAR-T: Safety in r/r ≥3rd line LBCL

	Product	Study	CRS All / Gr ≥3	ICANS All / Gr ≥3	Gr ≥3 cytopenia >30d	Infections Gr ≥3
Autologous	Axi-cel	ZUMA-1	93 / 11	64 / 30	38	NA / 10
	Tisa-cel	JULIET	57 / 23	20 / 11	34	37 / 19
	Liso-cel	TRANSCEND	42 / 2	30 / 10	37	NA / 12
	Rapa-cel	Phase 1	35 / 6	25 / 6	NA	19 / 6
Allogeneic	ALLO-501A	Phase 1	24 / 0	0 / 0	29	58 / 15
	PBCAR0191	Phase 1	65 / 0	30 / 6	NA	59 / 41
	CB-010	Phase 1 (2nd line)	57 / 0	22 / 7	20	48 / 22
	CTX110	Phase 1	18 / 0	9 / 6	NA	25 / 13

Neelapu SS et al. *N Engl J Med.* 2017;377:2531-2544. Locke FL et al. *Lancet Oncol.* 2019;20(1):31-42: Schuster SJ et al. *N Engl J Med.* 2019;380:45-56. Schuster SJ et al. *Lancet Oncol.* 2021;22(10):1403-1415; Abramson JS et al. *Lancet.* 2020;396(10254):839-852; Locke et al. Neelapu, ASH 2023 Abstract 2095; Shah et al. ASH 2021, Abstract 302; Hu B et al. ASCO 2024 Abstract 2025; McGuirk et al. EBMT 2023

Auto vs Allo CD19 CAR-T: Efficacy in r/r ≥3rd line LBCL

	Product	Study	ORR	CR rate
Autologous	Axi-cel	ZUMA-1	83%	58%
	Tisa-cel	JULIET	53%	39%
	Liso-cel	TRANSCEND	73%	53%
	Rapa-cel	Phase 1	80%	73%
Allogeneic	ALLO-501A	Phase 1	67%	58%
	PBCAR0191	Phase 1	69%	56%
	CB-010	Phase 1 (2nd line)	75%	50%
	CTX110	Phase 1	67%	41%

Neelapu SS et al. *N Engl J Med.* 2017;377:2531-2544. Locke FL et al. *Lancet Oncol.* 2019;20(1):31-42: Schuster SJ et al. *N Engl J Med.* 2019;380:45-56. Schuster SJ et al. *Lancet Oncol.* 2021;22(10):1403-1415; Abramson JS et al. *Lancet.* 2020;396(10254):839-852; Locke et al. Neelapu, ASH 2023 Abstract 2095; Shah et al. ASH 2021, Abstract 302; Hu B et al. ASCO 2024 Abstract 2025; McGuirk et al. EBMT 2023

Auto vs Allo CD19 CAR-T: Efficacy in r/r ≥3rd line LBCL

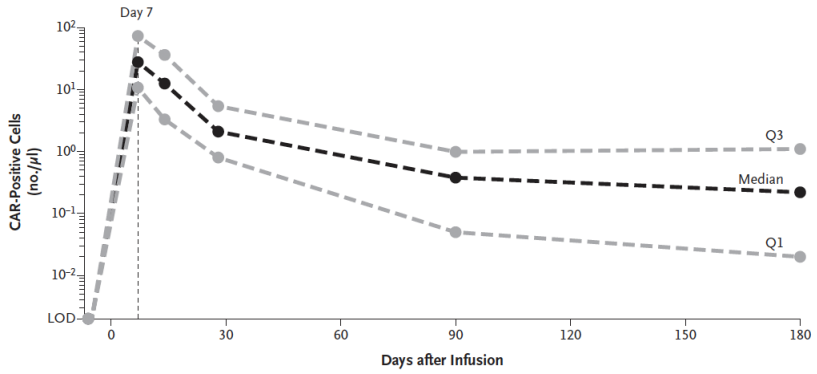
	Product	Study	ORR	CR rate	6-mo PFS rate
Autologous	Axi-cel	ZUMA-1	83%	58%	49%
	Tisa-cel	JULIET	53%	39%	39%
	Liso-cel	TRANSCEND	73%	53%	50%
	Rapa-cel	Phase 1	80%	73%	83%
Allogeneic	ALLO-501A	Phase 1	67%	58%	42%
	PBCAR0191	Phase 1	69%	56%	17%
	CB-010	Phase 1 (2nd line)	75%	50%	52% (≥4 HLA match)
	CTX110	Phase 1	67%	41%	15%

Neelapu SS et al. *N Engl J Med.* 2017;377:2531-2544. Locke FL et al. *Lancet Oncol.* 2019;20(1):31-42: Schuster SJ et al. *N Engl J Med.* 2019;380:45-56. Schuster SJ et al. *Lancet Oncol.* 2021;22(10):1403-1415; Abramson JS et al. *Lancet.* 2020;396(10254):839-852; Locke et al. Neelapu, ASH 2023 Abstract 2095; Shah et al. ASH 2021, Abstract 302; Hu B et al. ASCO 2024 Abstract 2025; McGuirk et al. EBMT 2023

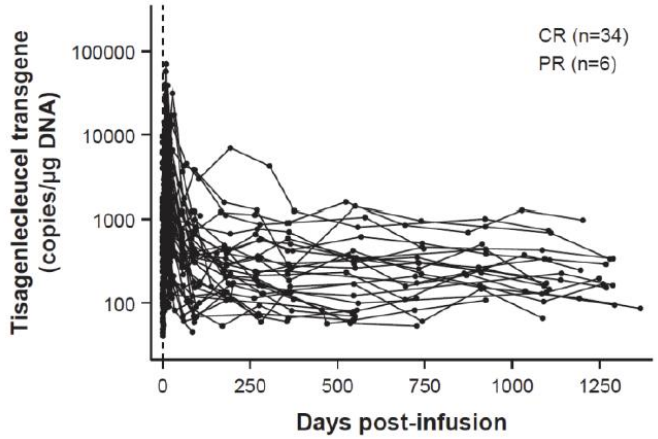
Auto vs. Allo CAR-T expansion

Auto CAR-T

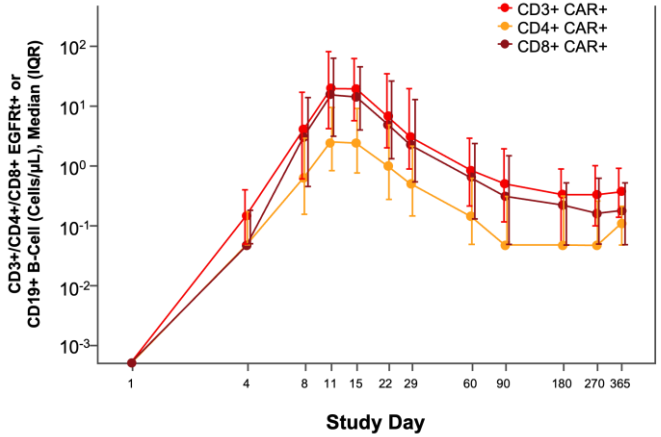
ZUMA-1 / Axi-cel



JULIET / Tisa-cel



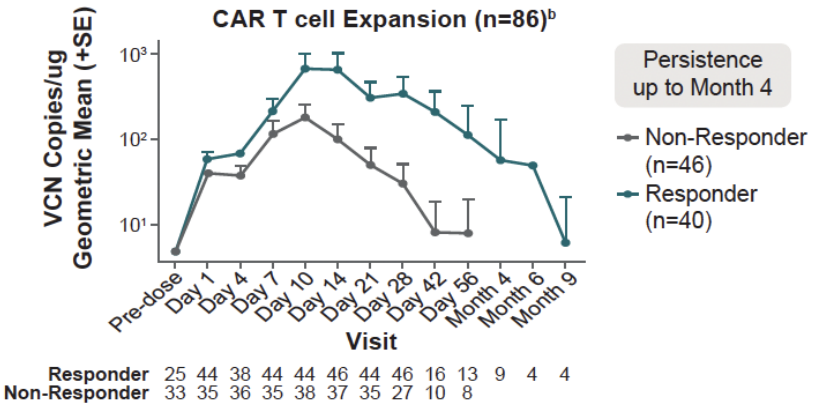
TRANSCEND / Liso-cel



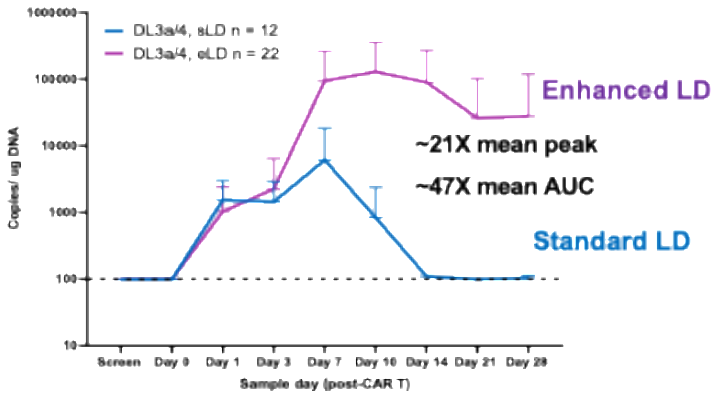
Neelapu et al. *N Eng J Med*, 2017; Schuster et al, Lancet Oncol, 2021; Abramson et al, ASH 2019, Abstract 241

Allo CAR-T

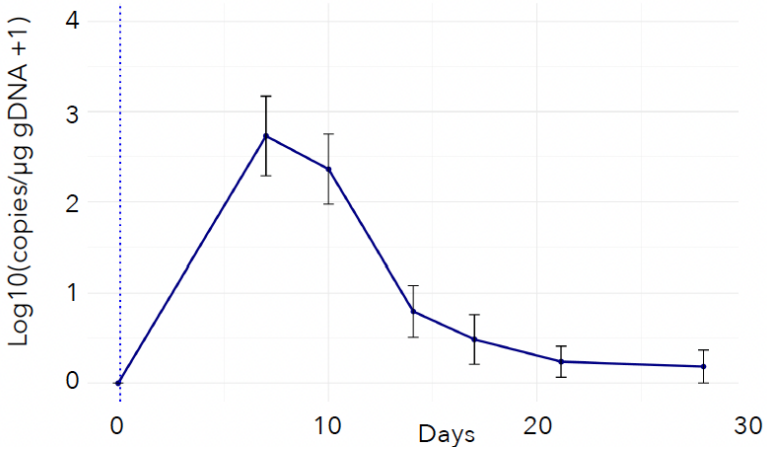
ALPHA / Cema-cel (ALLO-501)



PBCAR0191



CB-010

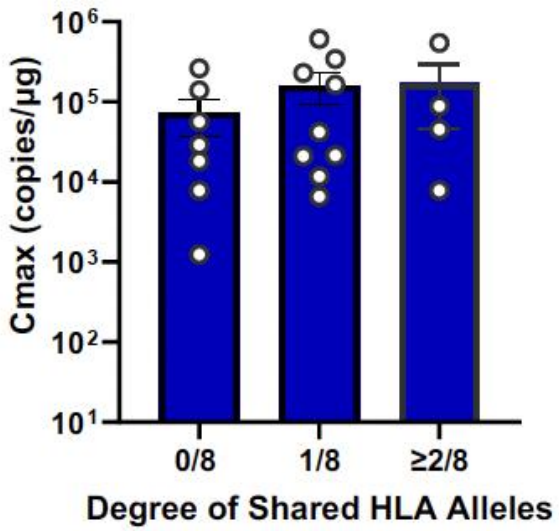


Locke et al. Neelapu, ASH 2023 Abstract 2095; Shah et al. ASH 2021, Abstract 302; Hu B et al. ASCO 2024 Abstract 2025

Cellular kinetics and response were not associated with degree of shared HLA alleles

ADI-001 Study
(γδ CD20 CART)

A



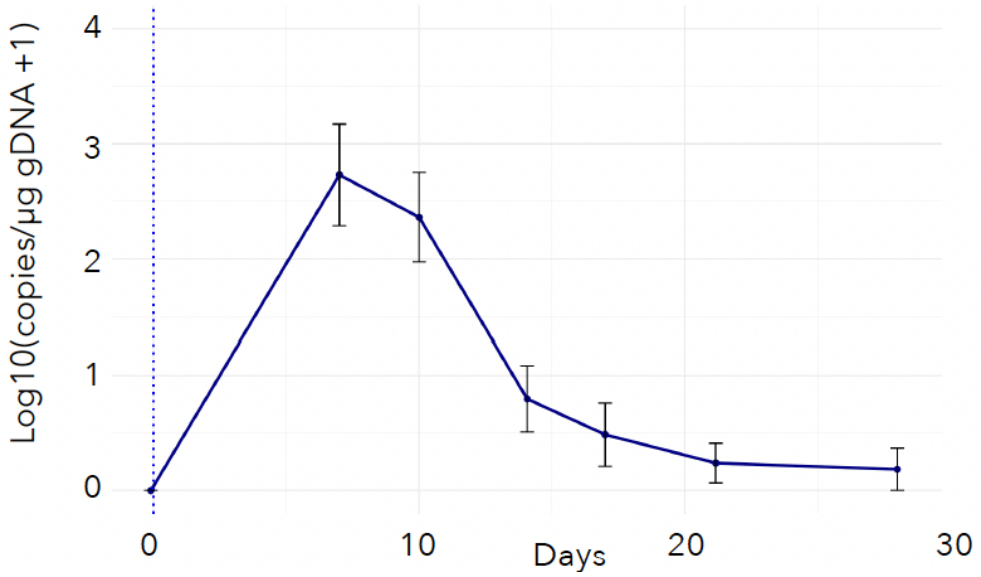
B

Shared HLA Alleles	CR/PR Rate n/N (%)
0/8	7/8 (87.5)
1/8	7/11 (63.6)
≥2/8	3/5 (60.0)

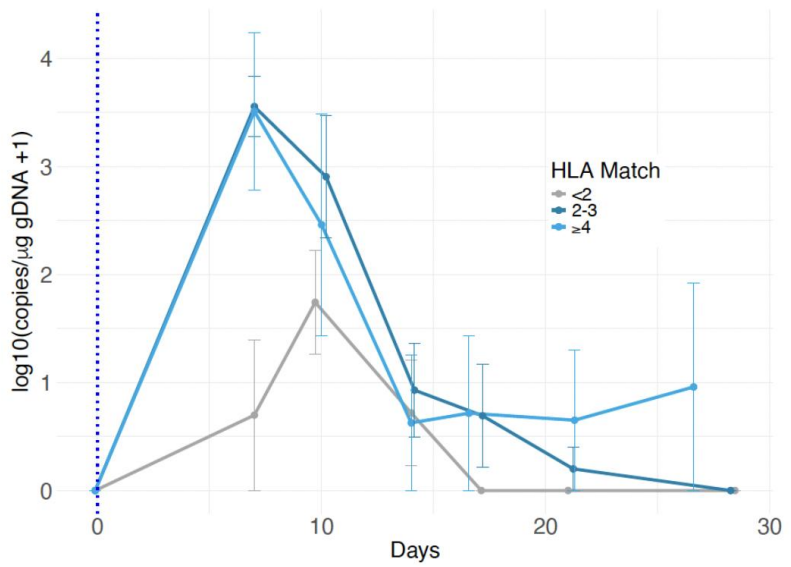
Moreno et al, ASH 2023, Abstract 3478

CB-010 Antler Phase 1 Study: CAR-T expansion

CAR-T expansion



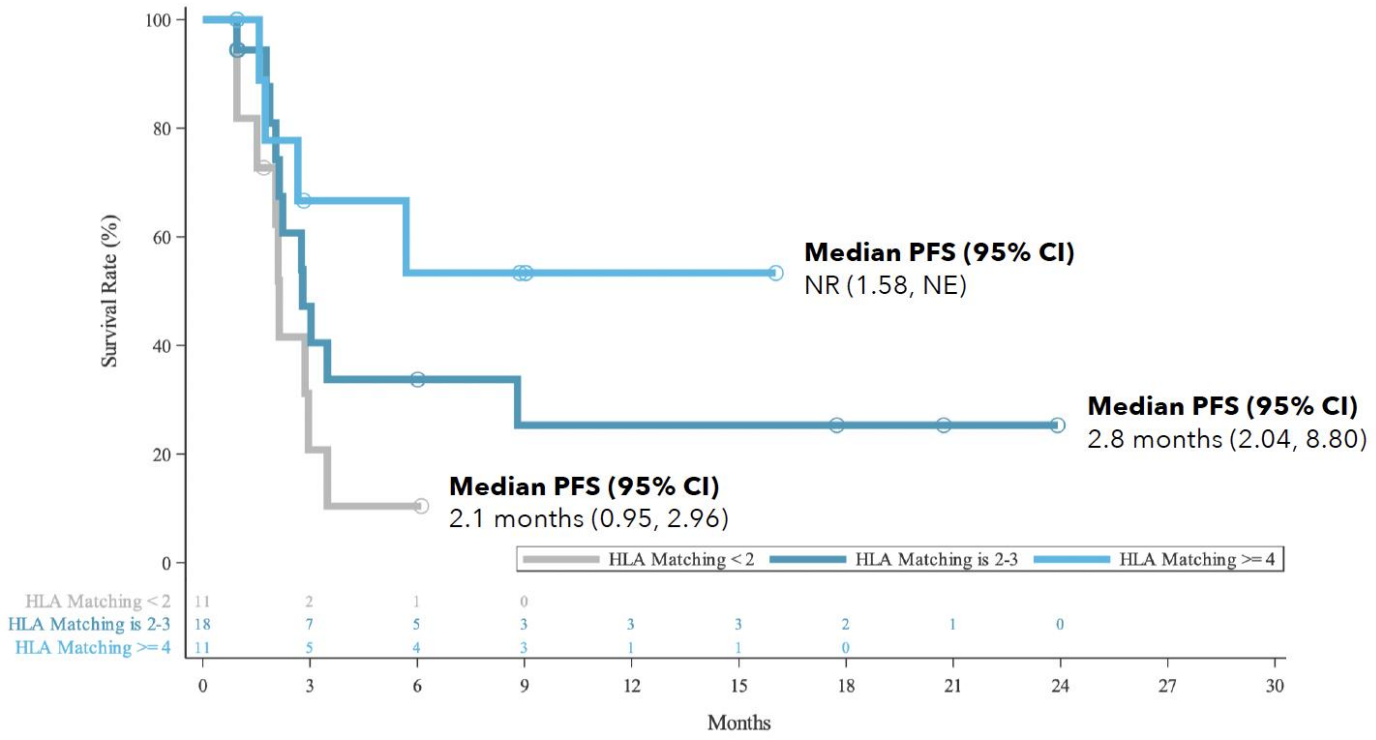
CAR-T expansion by level of HLA match



Hu B et al. ASCO 2024 Abstract 2025

CB-010 Antler Phase 1 Study: PFS

PFS by level of HLA match: LBCL patients (N=40)



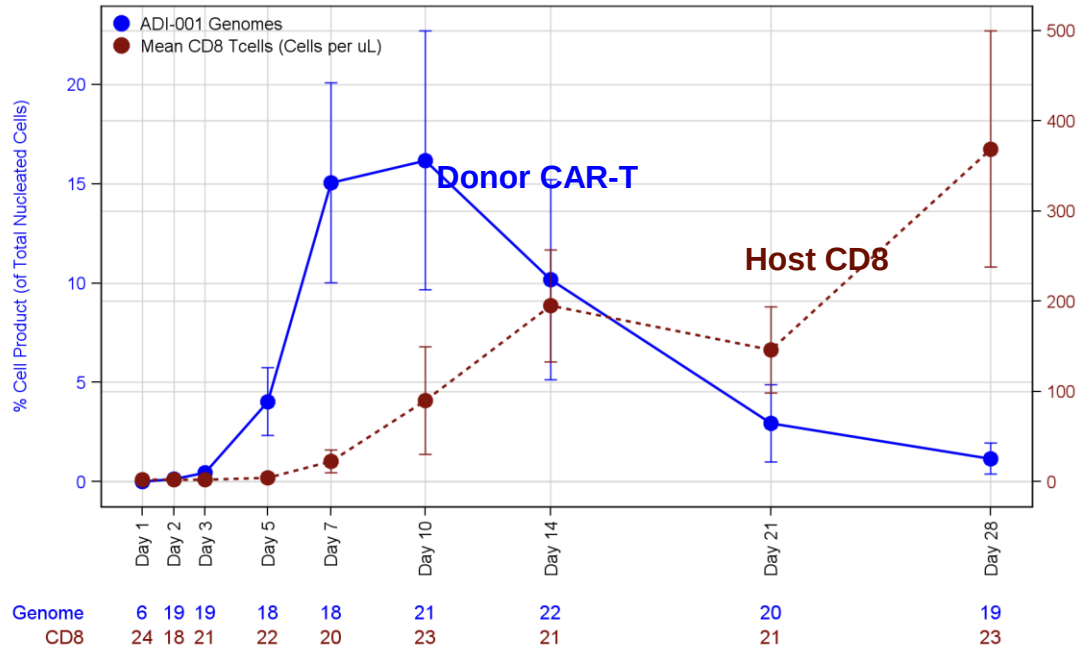
- RP2D: 80 x 10^6 CAR T cells
- Higher HLA matching was associated with improved PFS
- 20 additional 2L LBCL patients with partial HLA matching (≥4 alleles) planned to be enrolled at RP2D

Hu B et al. ASCO 2024 Abstract 2025

Loss of CAR-T persistence associated with host lymphocyte recovery

ADI-001 Study
(γδ CD20 CART)

CAR-T persistence vs. CD8 T cell recovery



Moreno et al, ASH 2023, Abstract 3478

Is there a strategy moving forward?

Can short-term persistence lead to durable CR with allogeneic CAR-T?

70 yo F

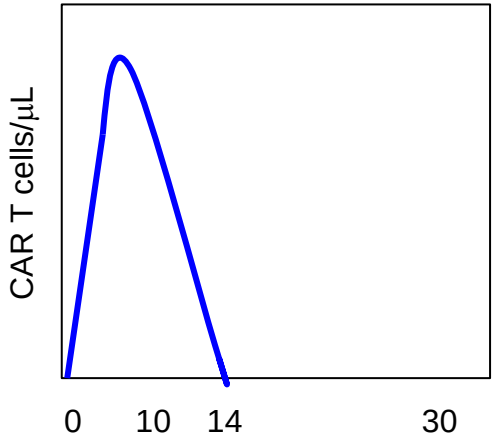
BR for FL

Obin-Len → tFL/DHL

R-CHOP + Ibrutinib

CD19 CART

Rit+Len



Flu: 30 mg/m^2/d

Cy: 500 mg/m^2/d

Days -5 to -3

Allogeneic αβ

CD20 CAR T

1x10^6

CAR+ cells/kg

Day 0

Grade 2 CRS

Grade 3 ICANS

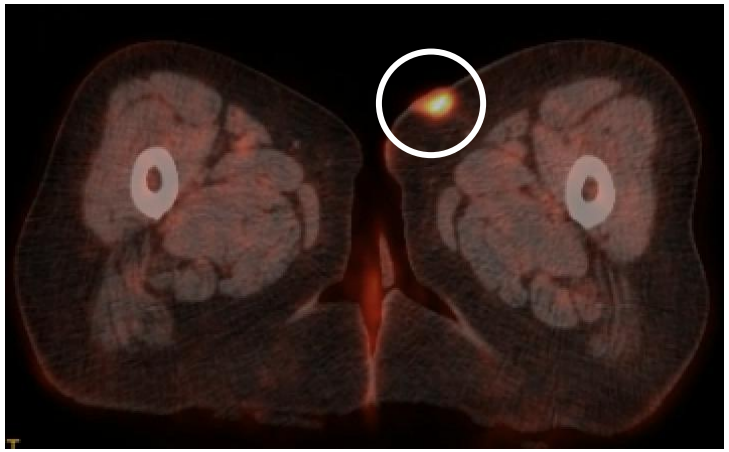
Day 10-14

CR

Day 30

CR

5 yrs



Low tumor burden

Peak CAR-T : Tumor ratio was likely optimal to eradicate lymphoma

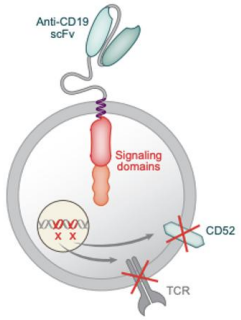
1 of 20 patients responded on a phase 1 trial

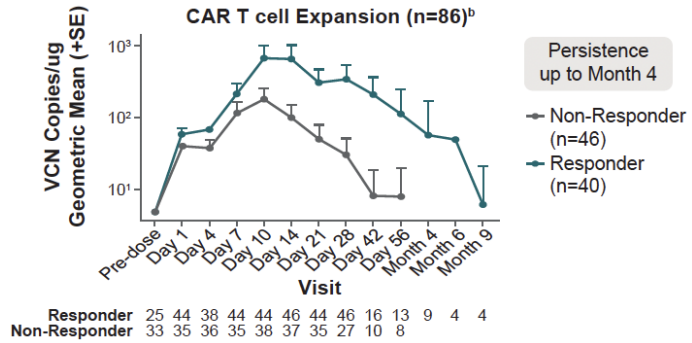
↓

Product development terminated

ALPHA 1&2 studies: Efficacy in CAR naïve R/R LBCL

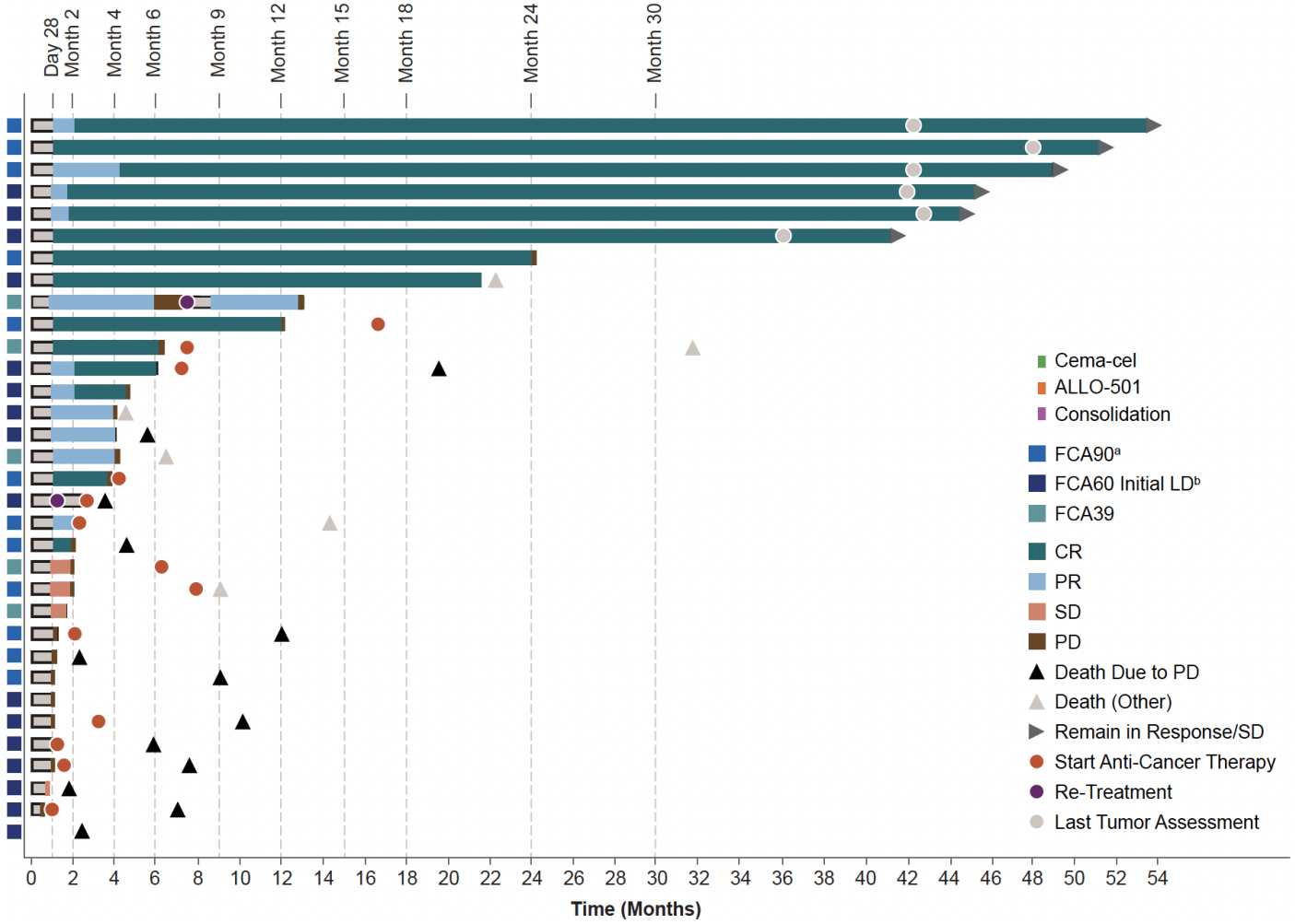
Cema-cel





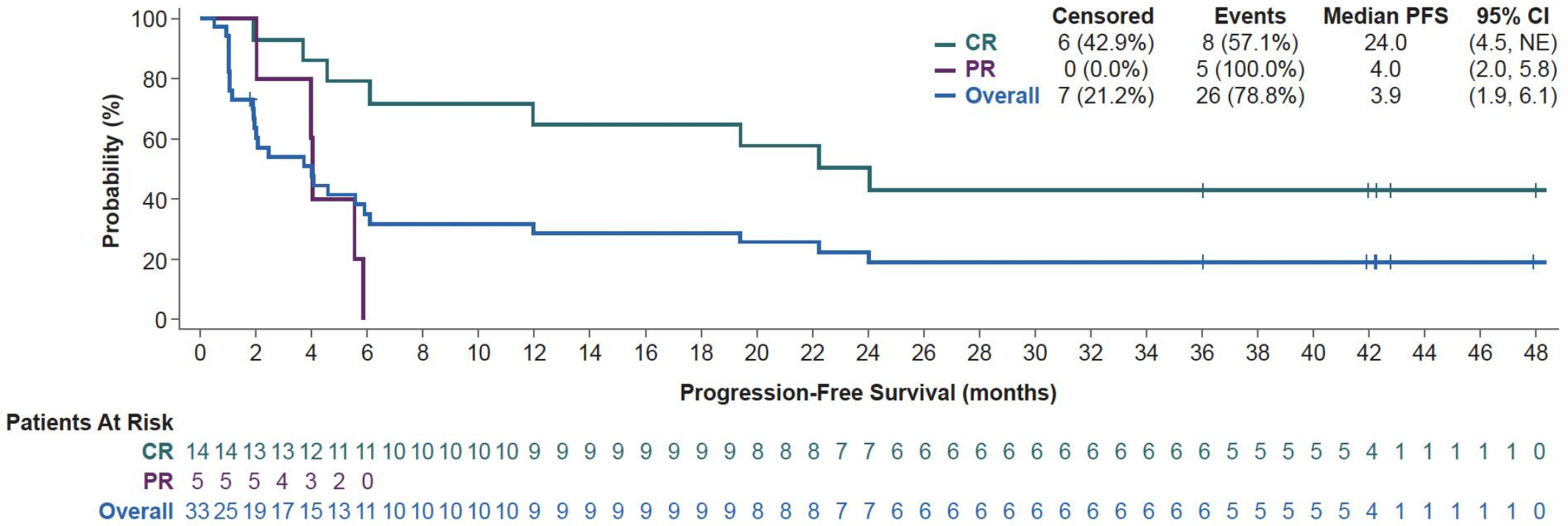
Cy + Flu + Anti-CD52 Ab

	All (N=33)	Phase 2 dose (N=12)
ORR, n (%)	19 (58)	8 (67)
CRR, n (%)	14 (42)	7 (58)
6 mo CRR, n (%)	10 (30)	5 (42)
12 mo CRR, n (%)	8 (24)	4 (33)



Locke et al Neelapu, *J Clin Oncol* 2025

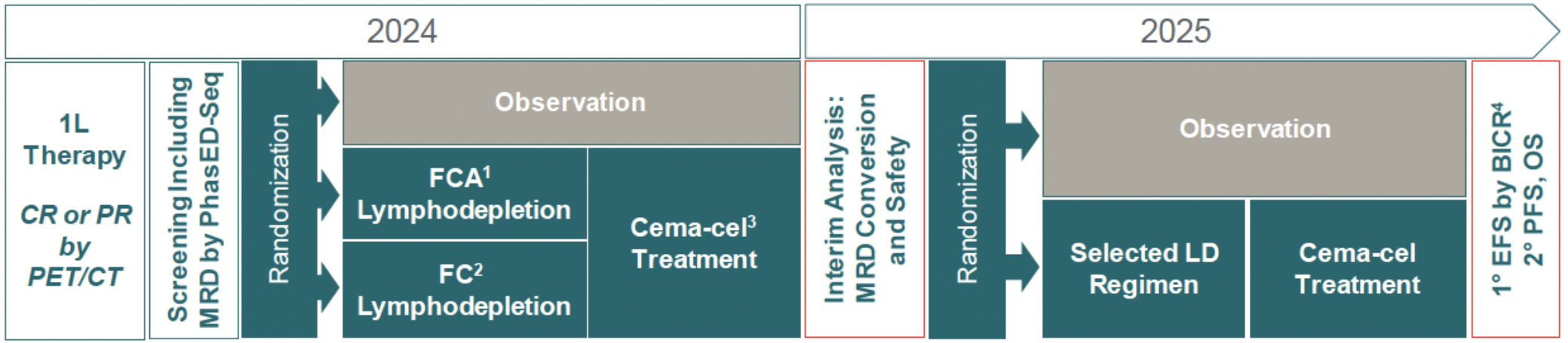
ALPHA 1&2 studies: PFS in CAR naïve R/R LBCL



Median follow-up: 10.1 mo (0.4 - 62.7 mo)

Locke et al Neelapu, *J Clin Oncol* 2025

ALPHA 3: Phase 3 study in first line LBCL



ALPHA3 Startup Underway, Enrollment Projected to Commence Mid-2024

- All LBCL potentially eligible: no upfront risk assessment (e.g., IPI score, double-hit, HGBCL)
- Approximately 110 patients in observation and treatment arms
  - All patients treated with "Selected LD Regimen" during LD selection will count toward pivotal sample
  - Continuous enrollment planned, no pause in enrollment for LD regimen selection
- Expected median time to EFS in observation arm ~8 months

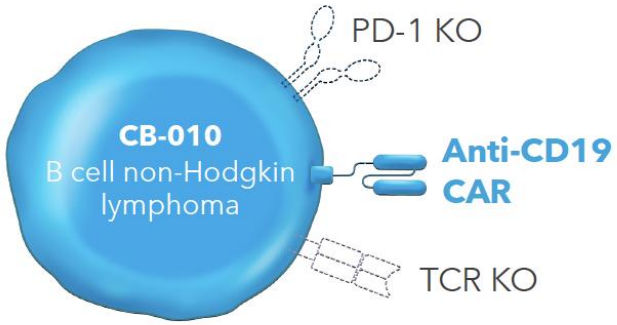
Allogene Corporate Presentation, Jan 2024

Strategy for current allogeneic CAR-T products: Evaluate in MRD setting

But can we do better?

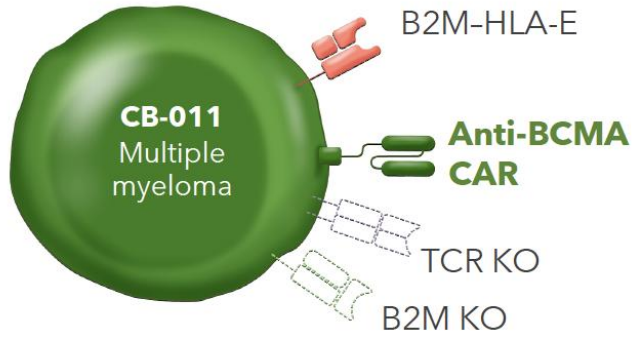
Next generation allogeneic CAR T

3 Edits



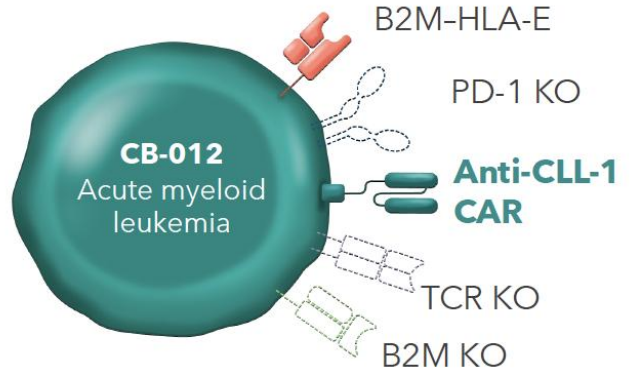
1st allogeneic anti-CD19 CAR-T cell therapy in the clinic with **checkpoint disruption** via PD-1 knockout (KO)[1] to reduce CAR-T cell exhaustion

4 Edits



1st allogeneic anti-BCMA CAR-T cell therapy with **immune cloaking** via *B2M* KO and insertion of B2M-HLA-E fusion protein[1]

5 Edits

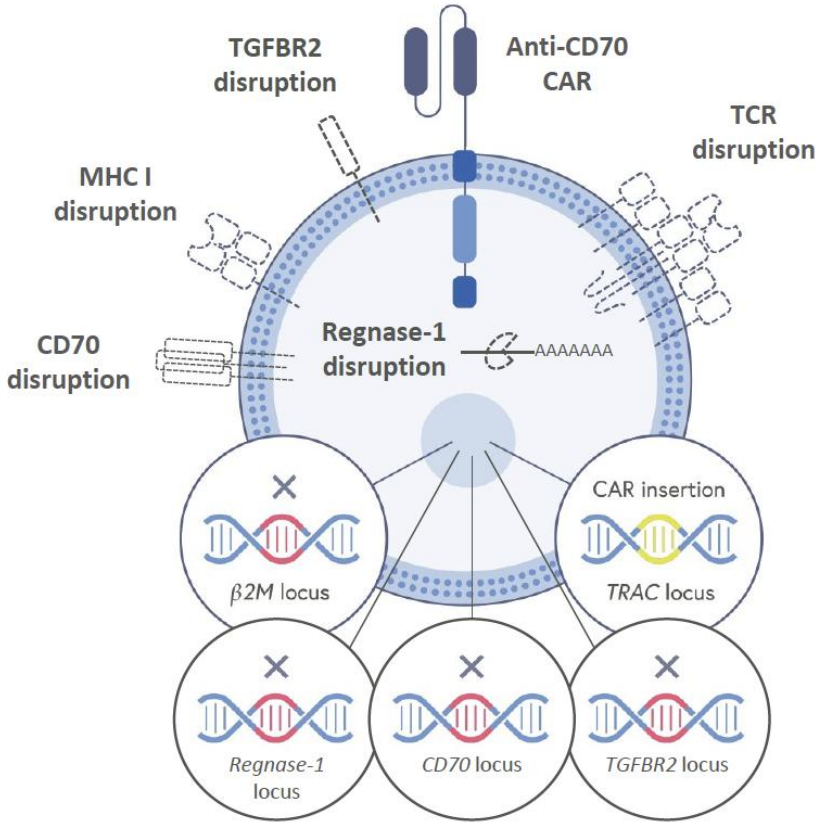


1st allogeneic CAR-T cell therapy with both **checkpoint disruption** and **immune cloaking**[1]

Next generation CD70 allogeneic CAR T

CTX131 (6 edits)

- **Regnase-1:** Removes intrinsic "brake" on T cell function
- **Increases functional persistence, cytokine secretion and sensitivity, effector function on tumors**

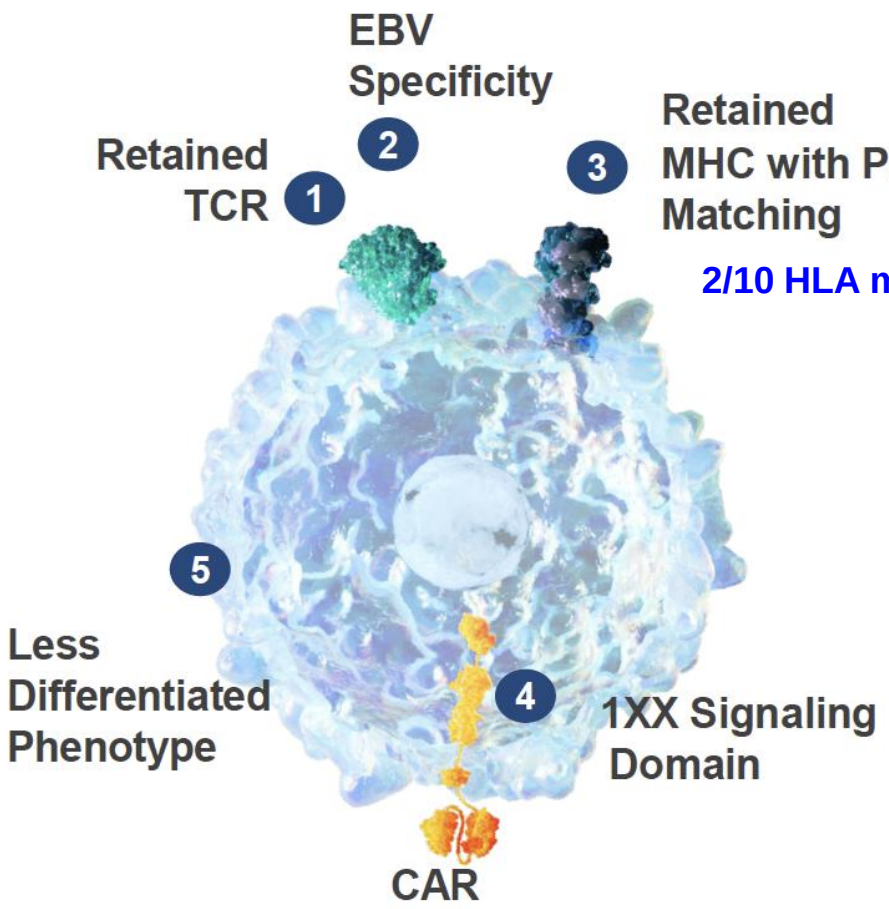


- **TGFBR2 KO:** Removes key extrinsic "brake" on T cell anti-tumor activity
- **Reduces TME inhibition of multiple CAR-T cell functions**

Adapted from Terrett et al. *AACR*, 2023

CAR insertion in allogeneic EBV-specific T cells

Atara's Allogeneic CAR T Platform



Addressing Key Challenges

***Challenge**: Graft vs Host Disease (GvHD) and Allorejection*

Atara Approach:

1. **Retained TCR:** Unedited TCR serves as a key T cell survival signal[1,2,3] contributing to functional persistence[3]
2. **EBV Specificity:** Low GvHD risk due to TCR recognition of viral antigens
3. **Retained MHC with Partial Matching:** Enables allogeneic approach that avoids host versus graft rejection[4,5]

***Challenge:** Exhaustion, Diminished Persistence, and Inflammatory Response*

Atara Approach:

4. **1XX Signaling Domain:** Novel CD3ζ signaling domain[6] optimizes potency, expansion and mitigates T-cell exhaustion while modulating activation

5. **Less Differentiated Phenotype:** αβ T-cell manufactured with less differentiated phenotype contributes to potency and moderates *in vivo* expansion of CAR-T cells, translating to potentially less severe inflammatory reactions

Atara Bio Corporate presentation, Nov 2024

Alloimmune defense receptor to resist host immune rejection

nature biotechnology

ARTICLES

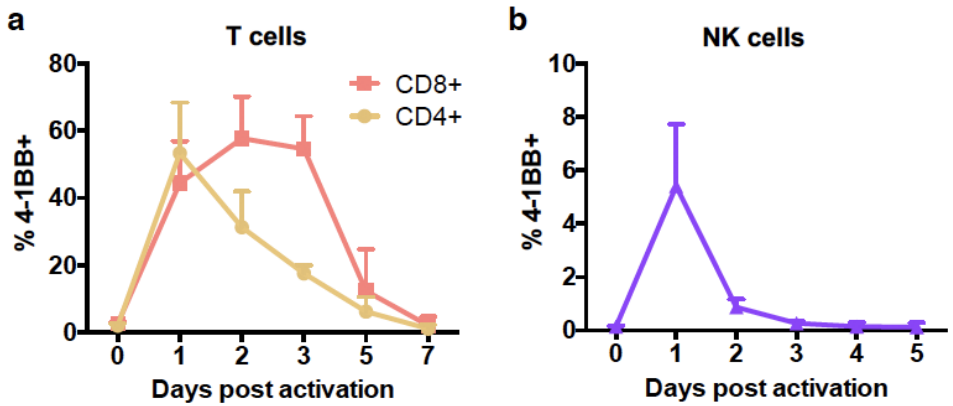
https://doi.org/10.1038/s41587-020-0601-5

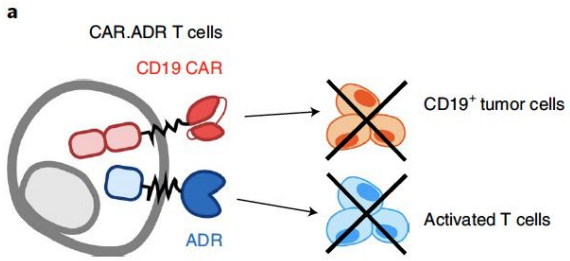
July 2020

Engineered off-the-shelf therapeutic T cells resist host immune rejection

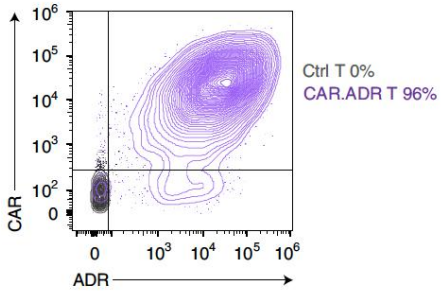
Feiyan Mo[1,2], Norihiro Watanabe[1], Mary K. McKenna[1], M. John Hicks[3], Madhuwanti Srinivasan[1], Diogo Gomes-Silva[1], Erden Atilla[1], Tyler Smith[1], Pinar Ataca Atilla[1], Royce Ma[1,4], David Quach[1], Helen E. Heslop[1,2], Malcolm K. Brenner[1,2] and Maksim Mamonkin[1,2,3,4] ✉

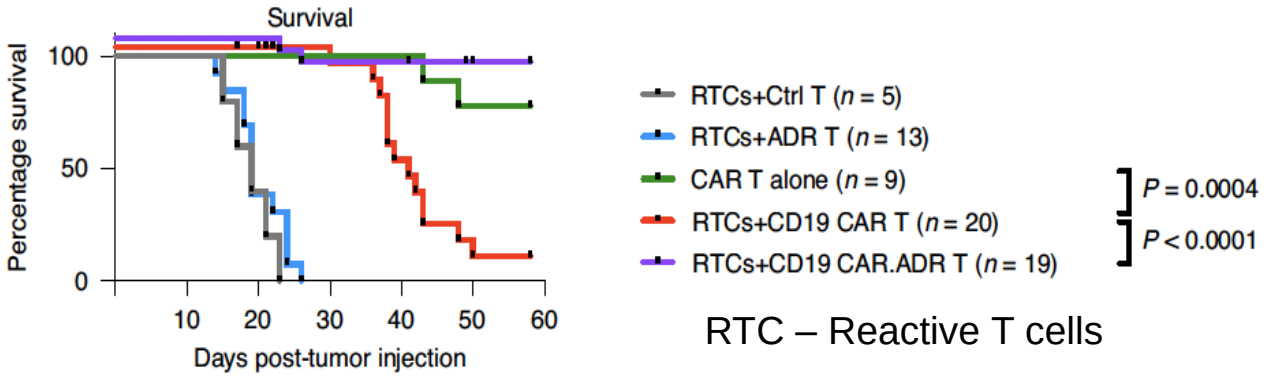
4-1BB is temporarily upregulated by activated lymphocytes





ADR = 4-1BBL-spacer-CD3ζ





RTC – Reactive T cells

- ADR-expressing T cells resist cellular rejection by targeting alloreactive lymphocytes *in vitro* and *in vivo*, while sparing resting lymphocytes

Disrupting the immune synapse to reduce rejection

CellPress
OPEN ACCESS

Cell Stem Cell

Sep 2024

Short article

Genetic ablation of adhesion ligands mitigates rejection of allogeneic cellular immunotherapies

Quirin Hammer,[1,9,*] Karlo Perica,[2,3,4,9] Rina M. Mbofung,[5] Hanna van Ooijen,[6] Karen E. Martin,[7,8] Pouria Momayyezi,[1] Erika Varady,[5] Yijia Pan,[5] Mark Jelcic,[5] Brian Groff,[5] Ramzey Abujarour,[5] Silje Z. Krokeide,[7,8] Tom Lee,[5] Alan Williams,[5] Jode P. Goodridge,[5] Bahram Valamehr,[5] Björn Önfelt,[1,6] Michel Sadelain,[3] and Karl-Johan Malmberg[1,7,8,10,*]

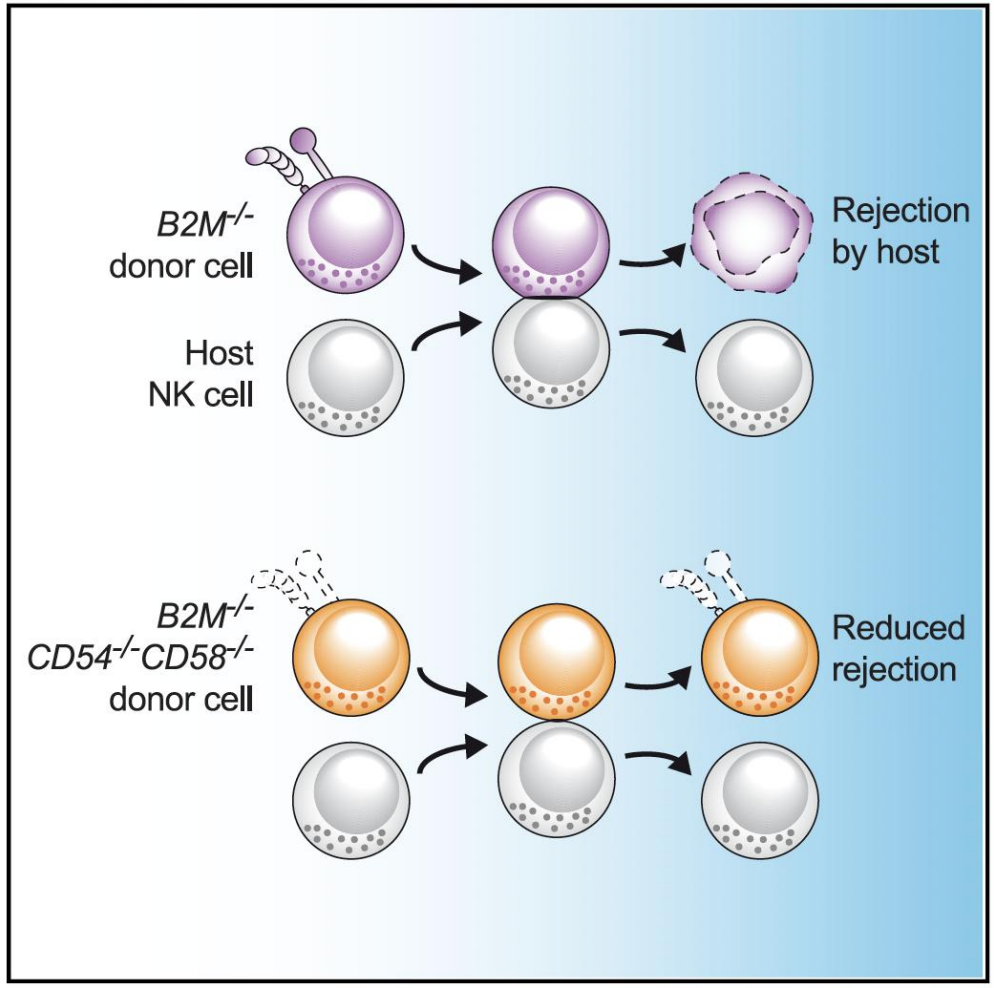
Alloimmune Defense Receptor Combined with Genetic Ablation of Adhesion Ligand CD58 Is a Comprehensive Approach to Promote Functional Persistence of Allogeneic Cell Therapies without Conditioning Chemotherapy

Alan Williams, Rina Mbofung, Daniel Morales-Mantilla, Brian Groff, Alison O'Connor, Binzhong Li, Ramesh Janani, Betsy Rezner, Mark Jelcic, Yijia Pan, Tom Lee, Karl-Johan Malmberg, Maksim Mamonkin, John Goulding, Jode Goodridge, Bahram Valamehr

ASH 2024

Blood (2024) 144 (Supplement 1): 503.

https://doi.org/10.1182/blood-2024-210846



Selective deletion of HLA-A/B (but not HLA-C/E/G) to prevent rejection

CellPress

Cell

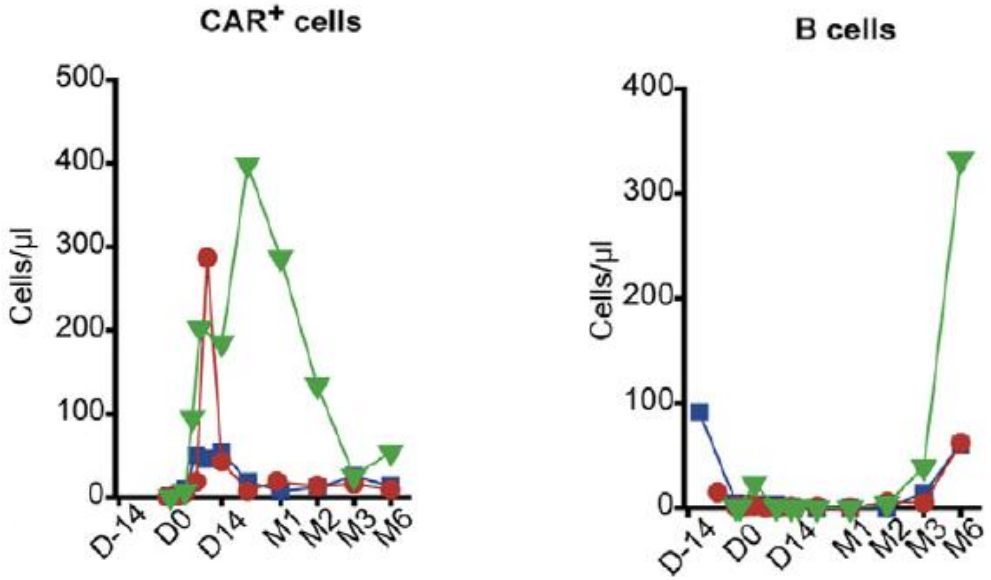
Sep 2024

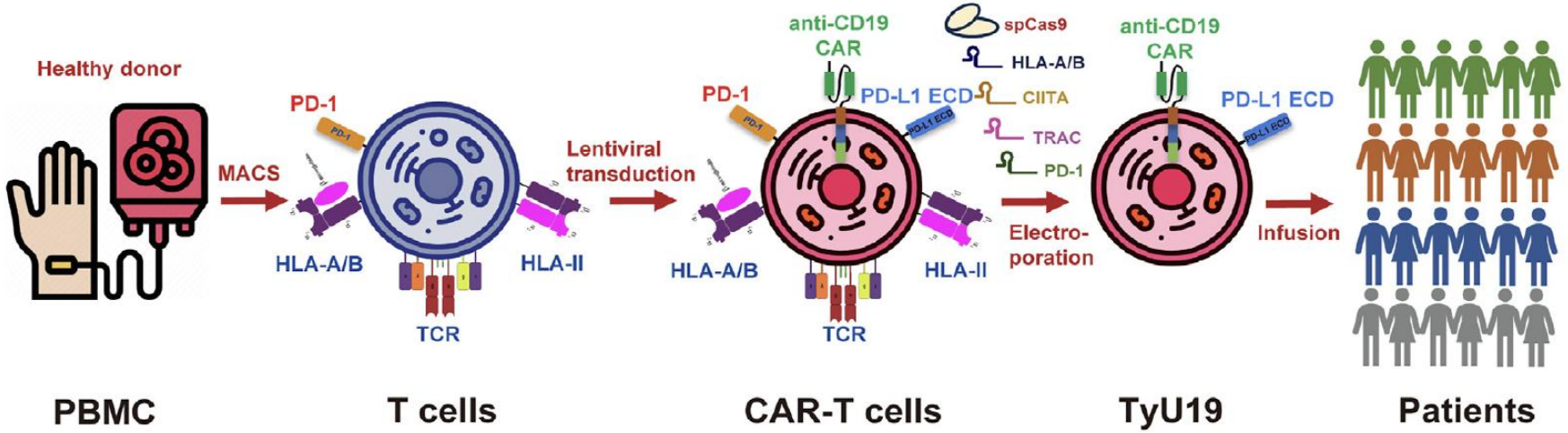
Article

Allogeneic CD19-targeted CAR-T therapy in patients with severe myositis and systemic sclerosis

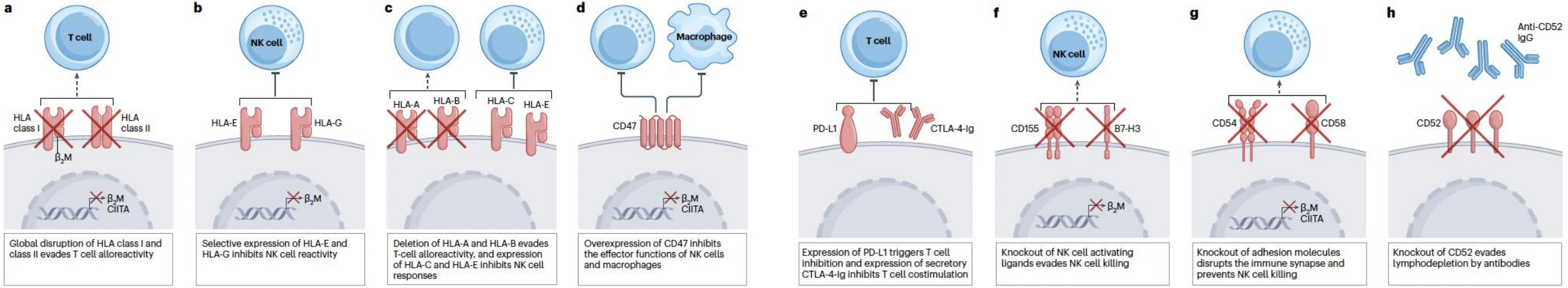
Xiaobing Wang,[1,2,22] Xin Wu,[1,2,22] Binghe Tan,[3,4,22] Liang Zhu,[5,22] Yi Zhang,[1] Li Lin,[1,2] Yi Xiao,[6] An Sun,[6] Xinyi Wan,[6] Shiyuan Liu,[6] Yanfang Liu,[2,7] Na Ta,[7] Hang Zhang,[8] Jialin Song,[8] Ting Li,[1] Ling Zhou,[1] Jian Yin,[1] Lingying Ye,[1] Hongjuan Lu,[1] Jinwei Hong,[9] Hui Cheng,[9] Ping Wang,[9] Weiqing Li,[10] Jianfeng Chen,[3] Jin Zhang,[11] Jing Luo,[12] Miaozhen Huang,[12] Lehang Guo,[13] Xiaoming Pan,[14] Yi Jin,[15] Wenjing Ye,[16] Lie Dai,[17] Jian Zhu,[18] Lingyun Sun,[19] Biao Zheng,[4] Dali Li,[3,4] Yanran He,[20] Mingyao Liu,[3,4,*] Huaxiang Wu,[5,*] Bing Du,[3,4,*] and Huji Xu[1,2,12,21,23,*]

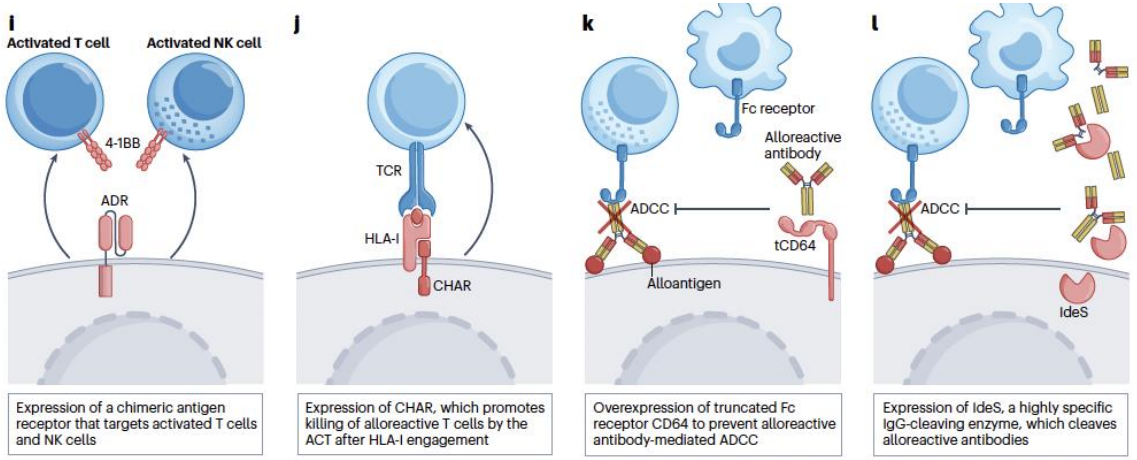
N = 3 patients





Strategies for immune evasion by allogeneic CAR T cells





Martin KE et al, *Nat Rev Immunol*. 2024 Sep;24(9):680-693

Thank you for your attention!

Email: sneelapu@mdanderson.org