Allogene® THERAPEUTICS

The Next Revolution in Cell Therapy

Leading Today, Creating Tomorrow

American Society of Clinical Oncology (ASCO)
May 29, 2020

Forward-Looking Statements

To the extent statements contained in this Presentation are not descriptions of historical facts regarding Allogene Therapeutics, Inc. ("Allogene," "we," "us," or "our"), they are forward-looking statements reflecting management's current beliefs and expectations. Forward-looking statements are subject to known and unknown risks, uncertainties, and other factors that may cause our or our industry's actual results, levels or activity, performance, or achievements to be materially different from those anticipated by such statements. You can identify forward-looking statements by words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "will," "would" or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes. Forward-looking statements contained in this Presentation include, but are not limited to, statements regarding: clinical outcomes, which may materially change as patient enrollment continues and more patient data become available, the timing and ability to progress the clinical trials of ALLO-501A and ALLO-715 and present any proof-of-concept data from the trials, the timing and ability to initiate a clinical trial of ALLO-715 in combination with SpringWorks' nirogacestat, the timing and ability to file an IND and initiate clinical trials of ALLO-316 and ALLO-605, the ability to manufacture AlloCAR T™ therapies for use in clinical trials, and the potential benefits of AlloCAR T™ therapy. Caution should be exercised when interpreting results from separate trials involving separate product candidates. There are differences in the clinical trial design, patient populations, and the product candidates themselves, and the results from the clinical trials of autologous products may have no interpretative value on our existing or future results. Various factors may cause differences between Allogene's expectations and actual results as discussed in greater detail in Allogene's filings with the Securities and Exchange Commission (SEC), including without limitation in its Form 10-Q for the quarter ended March 31, 2020 and filed with the SEC on May 6, 2020.

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David Chang, M.D., Ph.D.

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Virtual Webcast Agenda

Topic	Speaker	Time
Welcome and Potential for AlloCAR T Therapy	**David Chang, M.D., Ph.D.** Chief Executive Officer, President and Co-Founder of Allogene	10 minutes
Overview of the ALPHA Study	**Rafael Amado, M.D.** Executive Vice President, R&D and Chief Medical Officer of Allogene	5 minutes
ALPHA Trial Initial Results	**Sattva Neelapu, M.D.** University of Texas MD Anderson Cancer Center, Department of Lymphoma/Myeloma	10 minutes
The Road Ahead	**Rafael Amado, M.D.** Executive Vice President, R&D and Chief Medical Officer of Allogene	10 minutes
Panel Q&A	Moderated by David Chang	25 minutes

Why We Believe Allogeneic Cell Therapy Will Lead the Revolution

Access

- Potential to treat all eligible patients
- Repeat dosing, if needed
- No need for complex logistics

Cost

- Scalable and efficient manufacturing
- Potential to treat 100+ patients from a single manufacturing run
- Lower ancillary costs of care

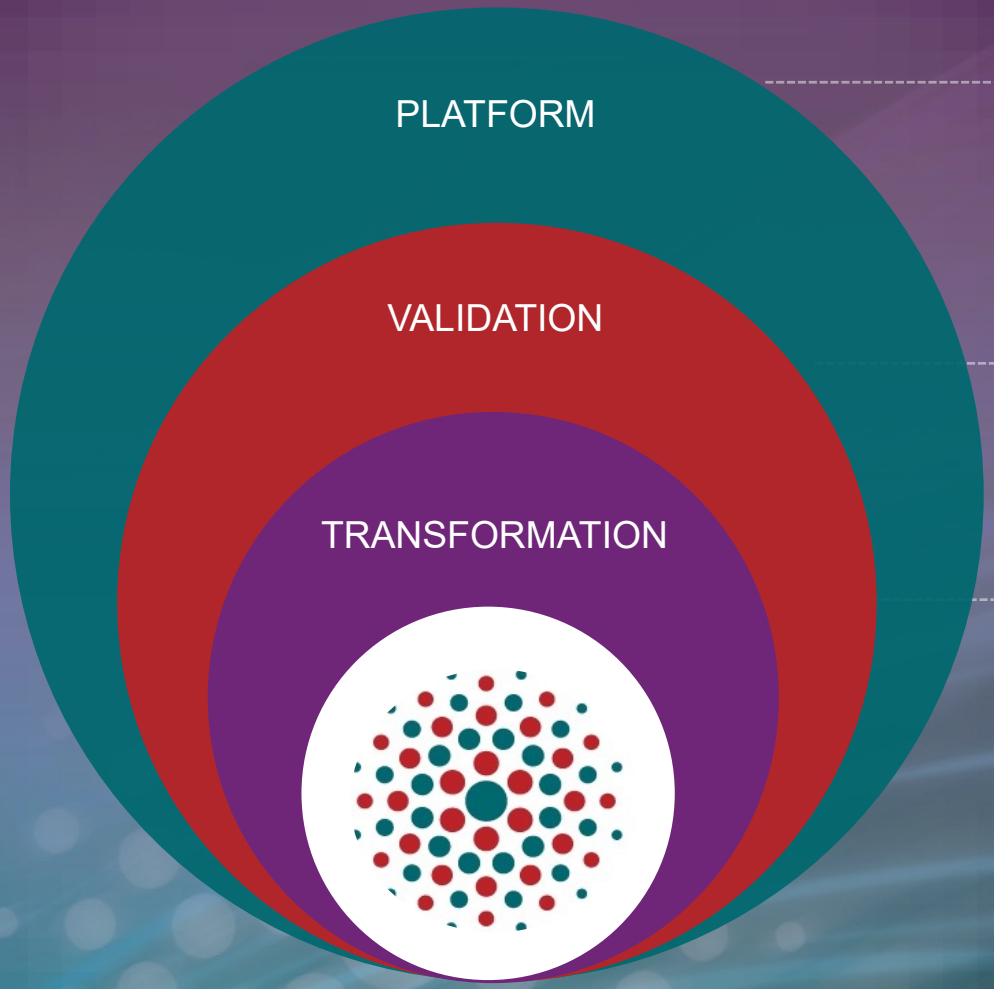
Speed/Reliability

- ”Off the shelf” for on demand treatment
- Less product variability, made from healthy T cells

Innovation

- Multiplex gene engineering/editing capabilities
- Opportunity for product optimization

The AlloCAR T™ Platform for Today and Tomorrow



Establish industry leading AlloCAR T platform

- TALEN® gene editing technology
- Proprietary lymphodepletion
- State-of-the-art manufacturing

Rapid development across robust AlloCAR T portfolio

- 4 Clinical & 16 Preclinical programs across both hematological and solid tumor indications

Pre-clinical next generation technologies

- TurboCAR™: Improved T cell fitness
- Immune evasion: Enhanced expansion/persistence
- Solid tumors: CAR optimization and target selection
- iPSCs: Renewable cell source

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Deep AlloCAR T™ Pipeline Targeting Vast Array of Tumor Types

CATEGORY		PROGRAM	PRE-CLINICAL	PHASE 1	PHASE 2/3[1]
Hematological Malignancies	CD19	UCART19 (ALL)[2]			
	CD19	ALLO-501 (NHL)[2 3]			
	CD19	ALLO-501A (NHL)[2 3]			
	BCMA	ALLO-715 (MM)			
	BCMA	ALLO-715 + nirogacestat (MM)[5]			
	BCMA	ALLO-605 (TurboCAR™/MM)			
		ALLO-316 (CD70)			
		ALLO-819 (FLT3/AML)			
Solid Tumors		ALLO-316 (CD70/RCC)			
		DLL3 (SCLC)			
		Multiple Undisclosed Targets			
Lymphodepletion Agent		ALLO-647 (Anti-CD52 mAb)[4]			

[1] Phase 3 may not be required if Phase 2 is registrational

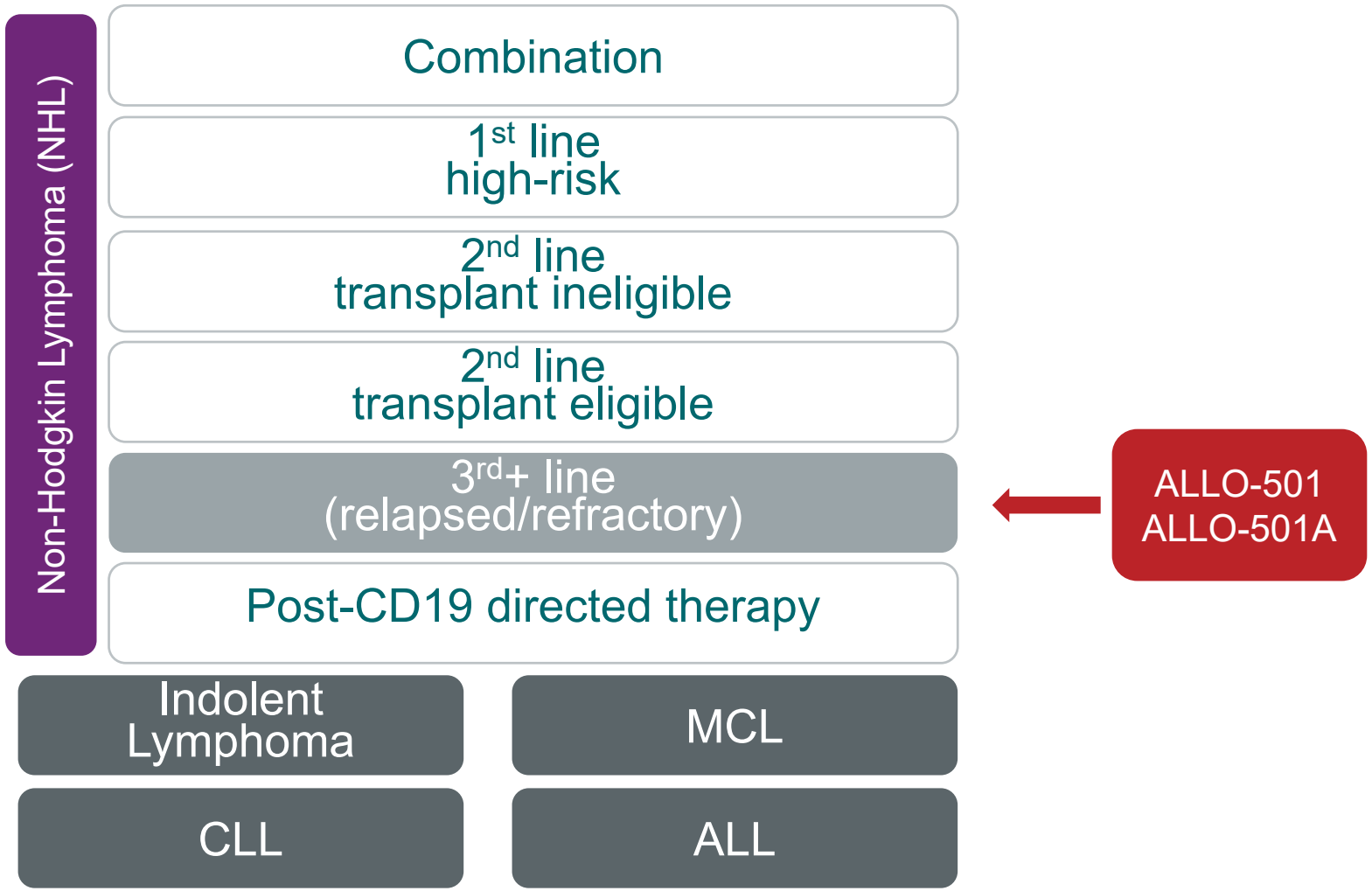
[2] Servier will hold ex-US commercial rights. Servier is the sponsor of the UCART19 trials

[3] Allogene is the sponsor of the ALLO-501 and ALLO-501A trial

[4] ALLO-647 intended to enable expansion and persistence of allogeneic CAR T product candidates

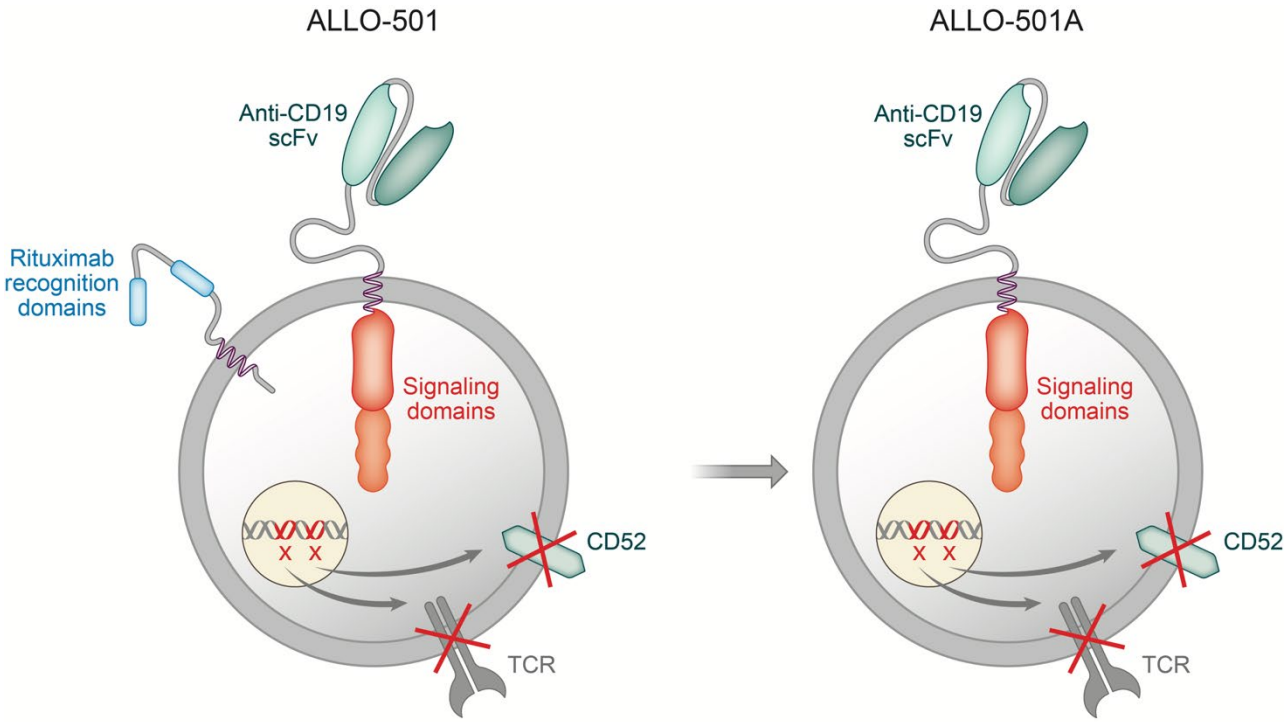
[5] Allogene sponsored trial in combination with SpringWorks Therapeutics; Initiation expected 2H 2020

Starting Point for ALLO-501/501A Development in NHL and other B-Cell Malignancies



Path to a Pivotal Trial: Next Generation ALLO-501A in R/R NHL

- **ALLO-501A**
  - Next generation anti-CD19 AlloCAR T intended for Phase 2 Development
  - Eliminates the rituximab recognition domains in ALLO-501, which we believe will allow for use in a broader patient population, including those NHL patients with recent rituximab exposure
  - Abbreviated Phase 1 Trial initiated in Q2 2020



Servier holds ex-US rights to ALLO-501A

2020 Clinical Milestone Progress

Q2 2020	✓ Initial Phase 1 ALLO-501 ALPHA trial data
Q2 2020	✓ Initiate ALLO-501A ALPHA2 clinical trial
2H 2020	Initiate ALLO-715 + nirogacestat (GSI) combination trial
Q4 2020	Initial Phase 1 ALLO-715 UNIVERSAL trial data
YE 2020	File IND for ALLO-316 (anti-CD70 CAR)

Rafael Amado, M.D.

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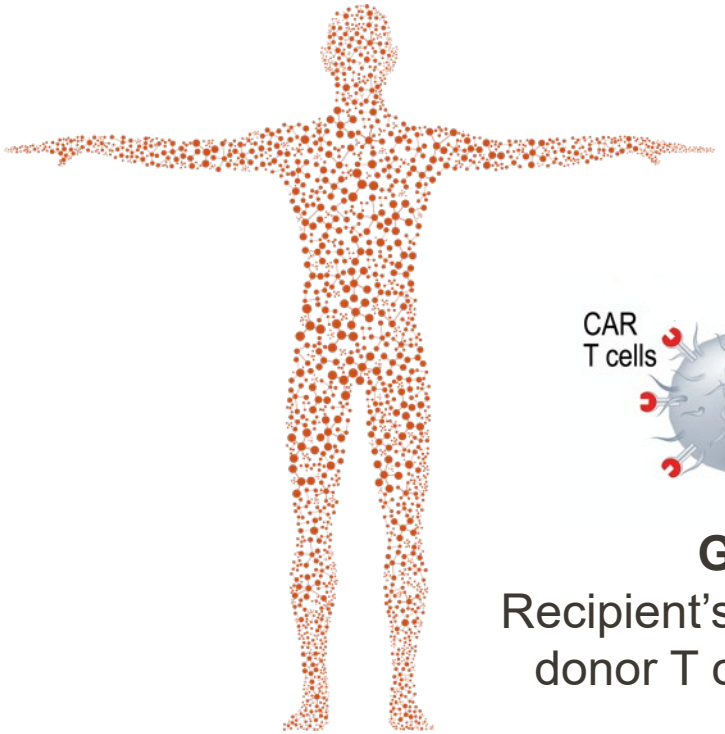
Defying Immunity: Overcoming GvHD and Graft Rejection

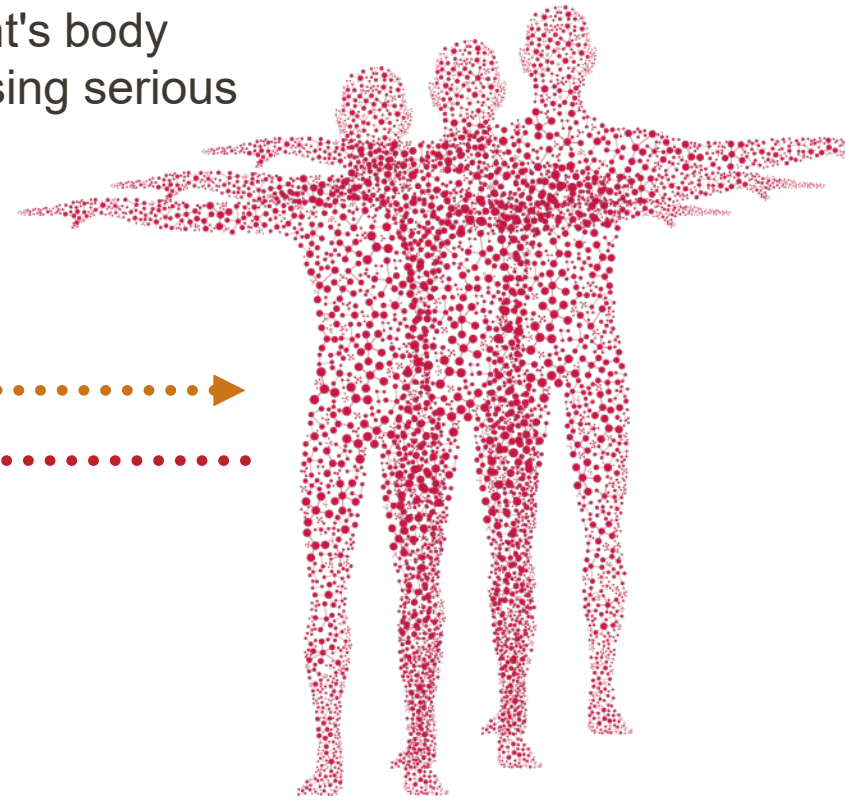


GvHD

Donor T cells view the recipient's body tissues as foreign and attack causing serious or fatal side effects

Graft Rejection

Recipient's immune system detects donor T cells as foreign and kills donor T cells



Allogeneic cell therapy engages the fundamental immunological process of Self vs. Non-Self recognition

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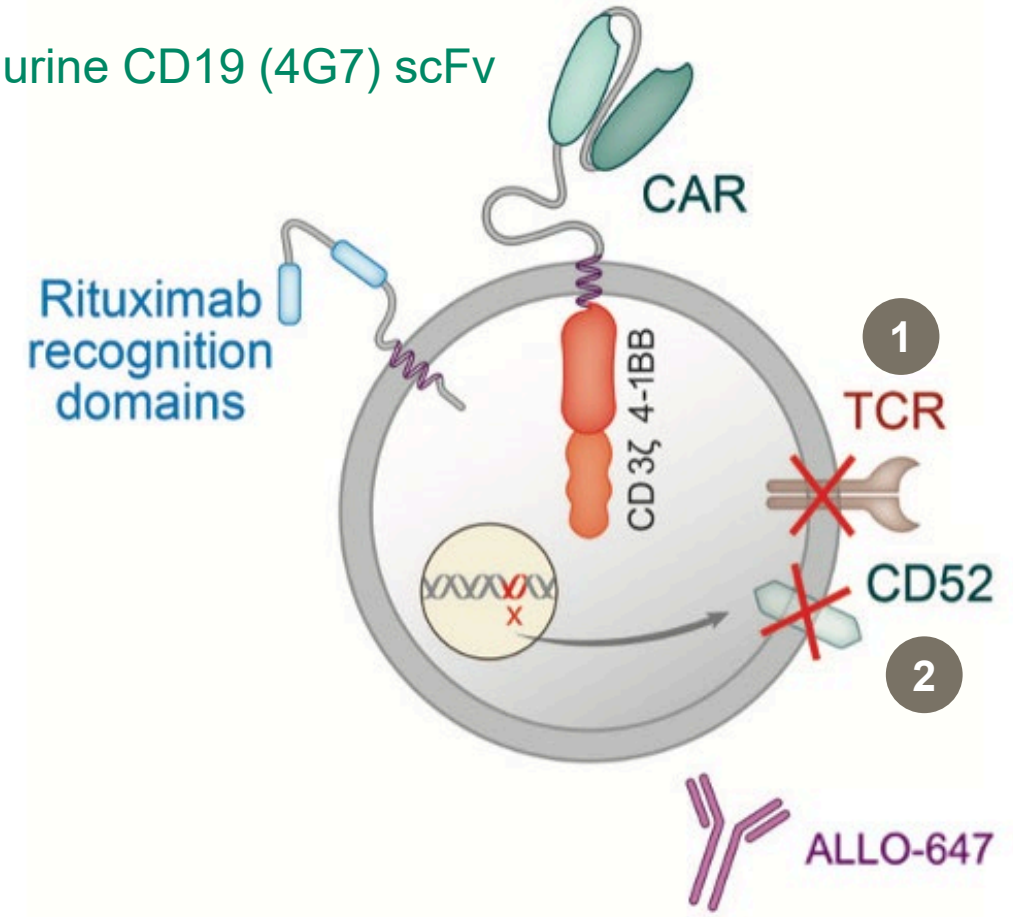
ALLO-501: Two Gene Edits Directed at Controlling GvHD and Graft Rejection



1. TALEN-mediated TRAC KO eliminates TCRα expression to minimize risk of GvHD

2. TALEN-mediated CD52 KO allows selective lymphodepletion with ALLO-647

TALEN® is a Cellectis gene editing technology

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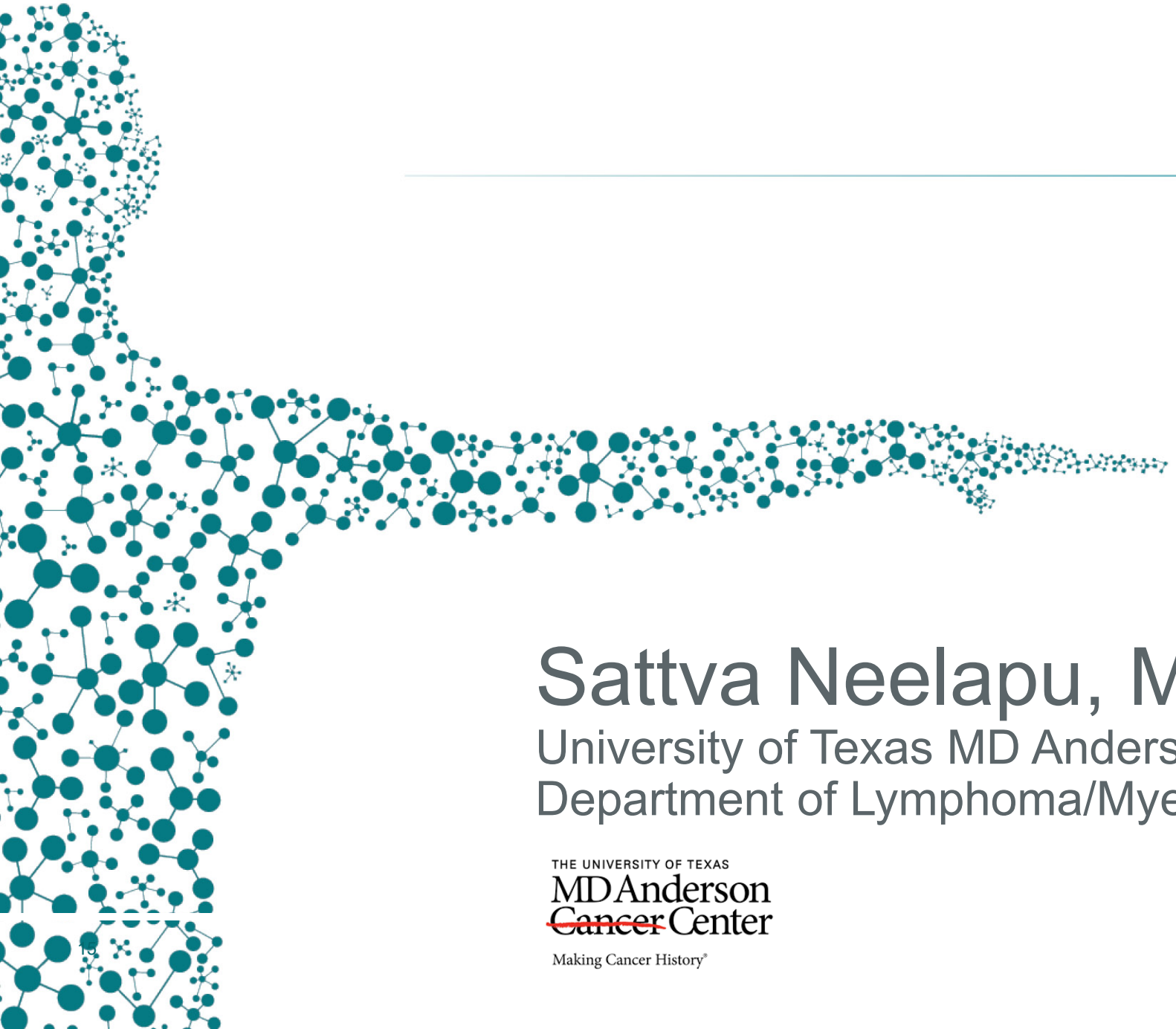
Key Questions for the ALLO-501 ALPHA Study

- ❑ Can ALLO-501 be successfully manufactured?
- ❑ Can ALLO-501 be safely administered without causing clinically relevant Graft vs. Host Disease?
- ❑ Can ALLO-647 be safely administered and allow a sufficient window of lymphodepletion to allow ALLO-501 expansion and persistence?
- ❑ Can ALLO-501 provide complete responses across multiple histologies?
- ❑ Can ALLO-501 provide durable responses?



Sattva Neelapu, M.D.

University of Texas MD Anderson Cancer Center
Department of Lymphoma/Myeloma

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

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First-in-Human Data of ALLO-501 and ALLO-647 in Relapsed/Refractory Large B-cell or Follicular Lymphoma (R/R LBCL/FL): ALPHA Study

Neelapu SS[1], Munoz J[2], Locke FL[3], Miklos DB[4], Brown R[5], McDevitt JT[5], Mardiros A[5], Demirhan E[5], Konto C[5], Tees M[6]

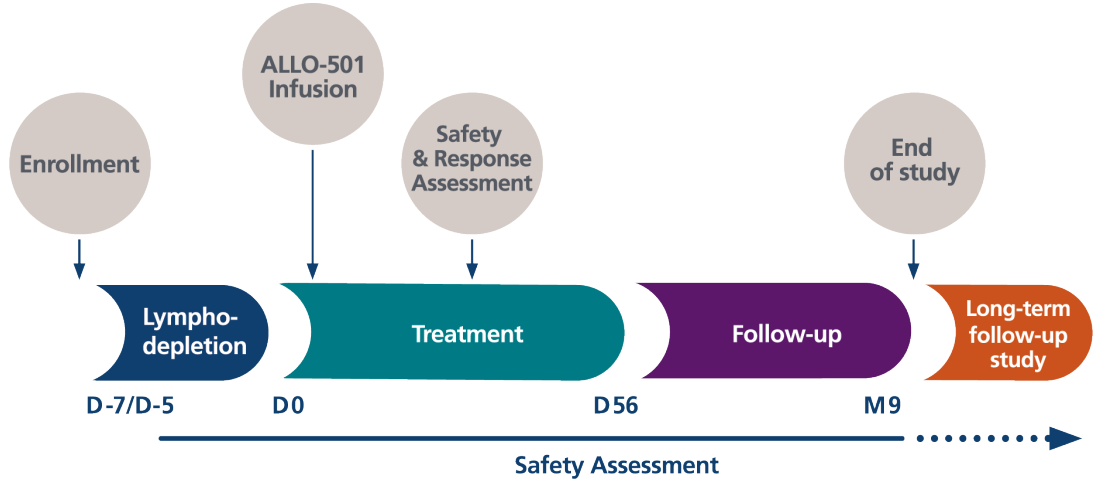
1. The University of Texas MD Anderson Cancer Center, Department of Lymphoma/Myeloma, Houston, TX;
2. Banner MD Anderson Cancer Center, Gilbert, AZ; 3. H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL;
4. Stanford University School of Medicine, Stanford, CA; 5. Allogene Therapeutics, South San Francisco, CA;
6. Colorado Blood Cancer Institute/Sarah Cannon Research Institute, Denver, CO

ALPHA Study (NCT03939026) Design and Endpoints
Phase 1, Open-label, Multicenter Dose Escalation Study

Primary Endpoints
- Safety and dose-limiting toxicity of ALLO-647/Flu/Cy followed by ALLO-501

Key Secondary Endpoints
- Overall response rate
- ALLO-501 cell kinetics
- ALLO-647 PK

Key Eligibility Criteria
- R/R LBCL or FL
- At least 2 prior lines of therapy, including an anti-CD20 monoclonal antibody
- ECOG 0 or 1
- Prior autologous CAR T allowed if tumor remains CD19+
- Patients with Donor Specific Antibodies and rituximab > 15ng/ml were excluded



	DL1	DL2	DL3
Cell Dose	40 x 10^6 CAR$^+$ T cells	120 x 10^6 CAR$^+$ T cells	360 x 10^6 CAR$^+$ T cells

- Lymphodepletion Regimens
  - LD1: Flu/Cy and ALLO-647 13 mg/d x 3 days
  - LD2/LD3: Flu/Cy and ALLO-647 30 mg/d x 3 days (concomitant/staggered)

Fludarabine (Flu): 30 mg/m2/d x 3 days **Cyclophosphamide (Cy)**: 300 mg/m2/d x 3 days

PRESENTED BY: Sattva S. Neelapu, M.D., The University of Texas MD Anderson Cancer Center, Department of Lymphoma/Myeloma, Houston, TX

ALPHA Phase 1 Patient Characteristics

	Number (%) of patients			
	40 x 10^6 DL 1 (N=4)	120 x 10^6 DL 2 (N=10)	360 x 10^6 DL 3 (N=8)	All Patients (N=22)
Median Age, years (range)	57 (42, 67)	70 (37, 73)	54 (34, 67)	63 (34, 73)
Male	3 (75%)	8 (80%)	6 (75%)	17 (77%)
Lymphoma Subtypes				
Diffuse Large B-cell Lymphoma †	3 (75%)	5 (50%)	6 (75%)	14 (64%)
Follicular Lymphoma	1 (25%)	5 (50%)	2 (25%)	8 (36%)
Current Disease Stage (per Lugano 2014) #				
Stage III	1 (25%)	5 (50%)	2 (25%)	8 (36%)
Stage IV	2 (50%)	5 (50%)	6 (75%)	13 (59%)
FL(IPI) Score 3-5	1 (25%)	6 (60%)	5 (63%)	12 (55%)
Prior Treatments				
Median Number (range)	2 (2-4)	4 (3-4)	5 (3-8)	4 (2-8)
Hematopoietic Stem Cell Transplant	2 (50%)	4 (40%)	3 (38%)	9 (41%)
Autologous CAR T cell	-	1 (10%)	3 (38%)	4 (18%)

- Heavily pretreated patients with advanced-stage disease
- 14 (64%) of patients were chemo refractory*
- 4 patients received prior AutoCAR T
  - 2 had short-lasting PR as best response and 2 had PD as best response with AutoCAR T
- Analyses sets:
  - Efficacy: N=19
  - Safety: N=22

† Not otherwise specified, transformed FL, high-grade B cell lymphoma (double and triple hit), DLBCL coexistent with FL of any grade
# 1 patient with stage II disease treated at DL1
* Defined as best outcome of SD or PD following last therapy, or progression within 12 months following Hematopoietic Stem Cell Transplant

Data Cutoff Date: May 11, 2020

ALPHA Phase 1 Patient Flow

Enrolled Patients: 23*

1 patient was enrolled but removed before lymphodepletion due to acute kidney injury

Treated Patients: 22

CAR+ T cells Dose	39mg ALLO-647	90mg ALLO-647
40 x 10^6 CAR^+ T cells	4	0
120 x 10^6 CAR^+ T cells	4	6
360 x 10^6 CAR^+ T cells	3	5

- Efficacy Analysis Set (All patients with at least 1 imaging assessment): **19**
- One lot of ALLO-501 used

Median/Mean Time from Enrollment to Start of Lymphodepletion: ***5 Days***

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ALLO-501 and ALLO-647 Demonstrate Manageable Safety Profile

AE of Interest ‡	Grade 1 n (%)	Grade 2 n (%)	Grade 3 n (%)	Grade 4 n (%)	Grade 5 n (%)	All grades n (%)
Cytokine Release Syndrome *	2 (9%)	4 (18%)	1 (5%)	-	-	7 (32%)
ICANS *	-	-	-	-	-	-
Graft-versus-Host Disease	-	-	-	-	-	-
Infection	5 (23%)	4 (18%)	2 (9%)†	-	-	11 (50%)
Infusion Reaction #	1 (5%)	9 (41%)	1 (5%)	-	-	11 (50%)
Neutropenia	-	1 (5%)	7 (32%)	7 (32%)	-	15 (68%)

- No DLT, GvHD
- Manageable CRS
- ALLO-501 toxicity not dose-proportional
- Median duration of hospitalization from D0: 7 days

Serious Adverse Events (time to resolution) ‡

- **4 patients (18%):**
  - Gr2 pyrexia (2 days) and Gr2 CMV reactivation (6 days)
  - Gr3 rotavirus infection (15 days) and Gr3 hypokalemia (2 days)
  - Gr3 febrile neutropenia (2 days) and Gr3 hypotension (2 days)
  - Gr3 upper GI hemorrhage (<1 day) and Gr3 CMV reactivation (25 days)

* ASTCT Lee, 2019. ICANS: Immune Effector Cell-Associated Neurotoxicity Syndrome
† CMV reactivations and Rotavirus infection
# attributed to ALLO-647

‡ Number of patients with AE regardless of attribution unless otherwise indicated, occurring from the start of study drug up to subsequent anti-cancer therapy (for patients reporting more than one AE within a preferred term, only one AE with the maximum grade is reported).

Data Cutoff Date: May 11, 2020

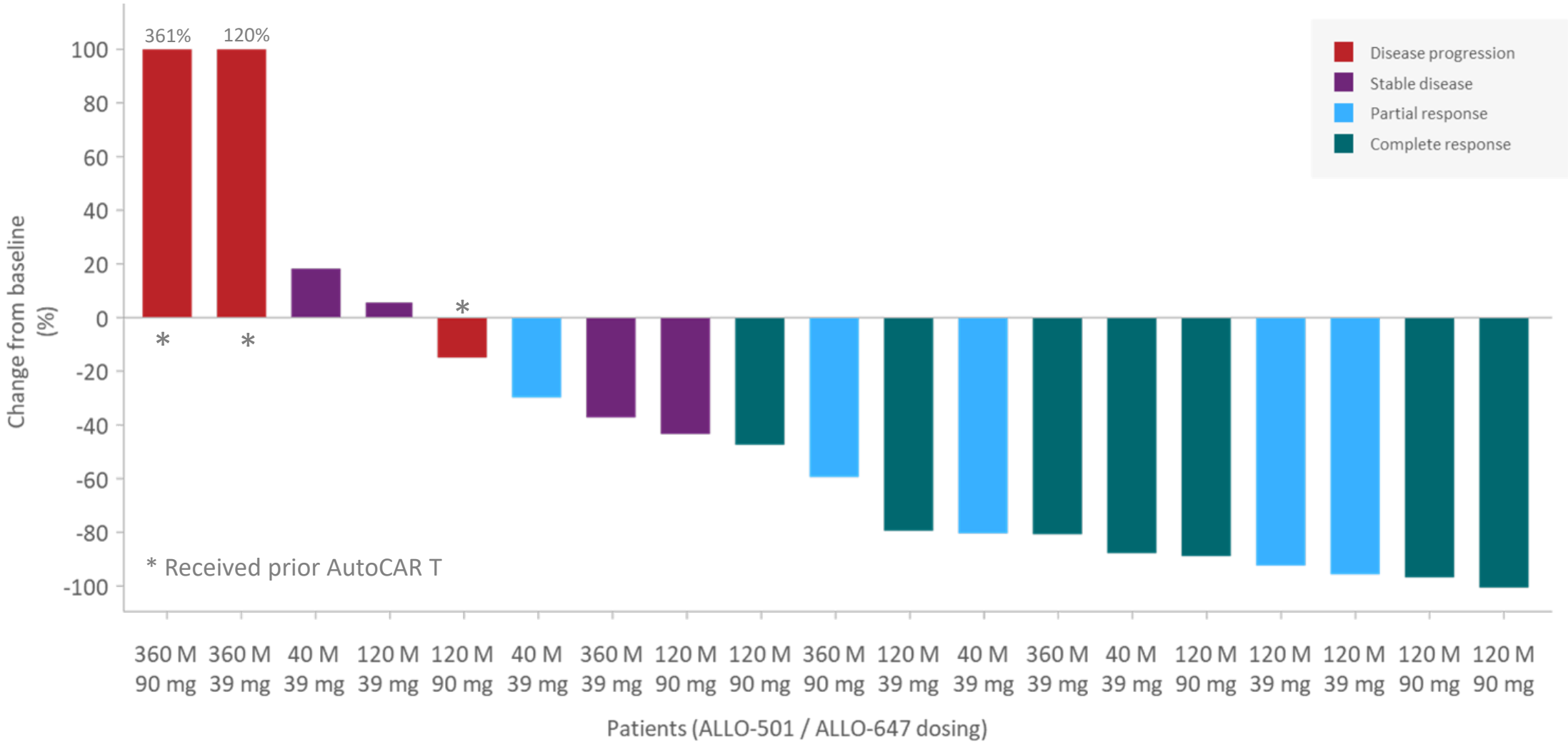
Phase 1 ALPHA Best Overall Response

Cell Dose and LD regimen	39mg ALLO-647			ALL 39mg ALLO-647 (N = 11)	90mg ALLO-647		All 90mg ALLO-647 (N=8)	All Patients (N=19) Rate (95%CI)
	40 x 10^6 CAR$^+$ cells (N=4)	120 x 10^6 CAR$^+$ cells (N=4)	360 x 10^6 CAR$^+$ cells (N=3)		120 x 10^6 CAR$^+$ cells (N=6)	360 x 10^6 CAR$^+$ cells (N=2)		
ORR, n (%)	3 (75%)	3 (75%)	1 (33%)	7 (64%)	4 (67%)	1 (50%)	5 (63%)	12/19 (63%) (38%, 84%)
CR , n (%)	1 (25%)	1 (25%)	1 (33%)	3 (27%)	4 (67%)	0 (0%)	4 (50%)	7/19 (37%) (16%, 62%)

Median follow-up time: 3.8 months (range: 0.7 - 6.1)

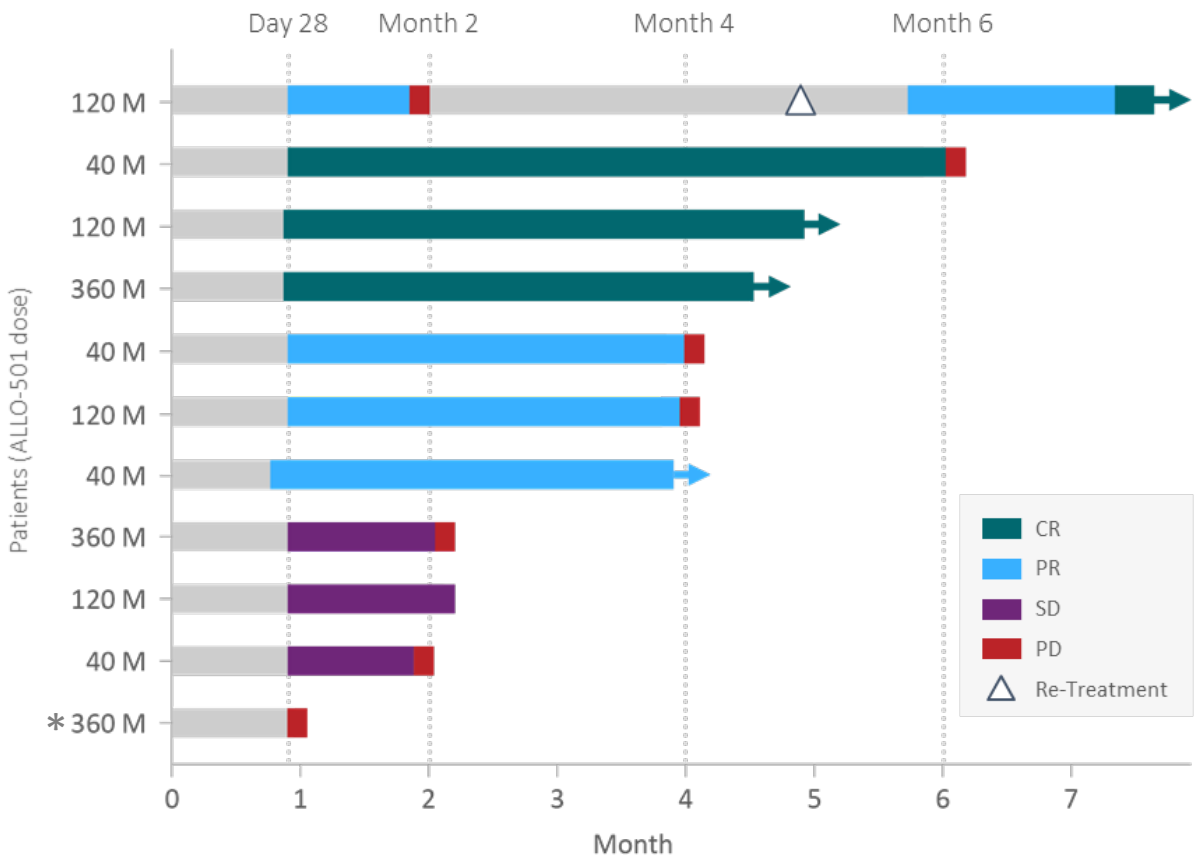
Lugano 2014; Data Cutoff Date: May 11, 2020

Reduction in Tumor Size Observed with ALLO-501



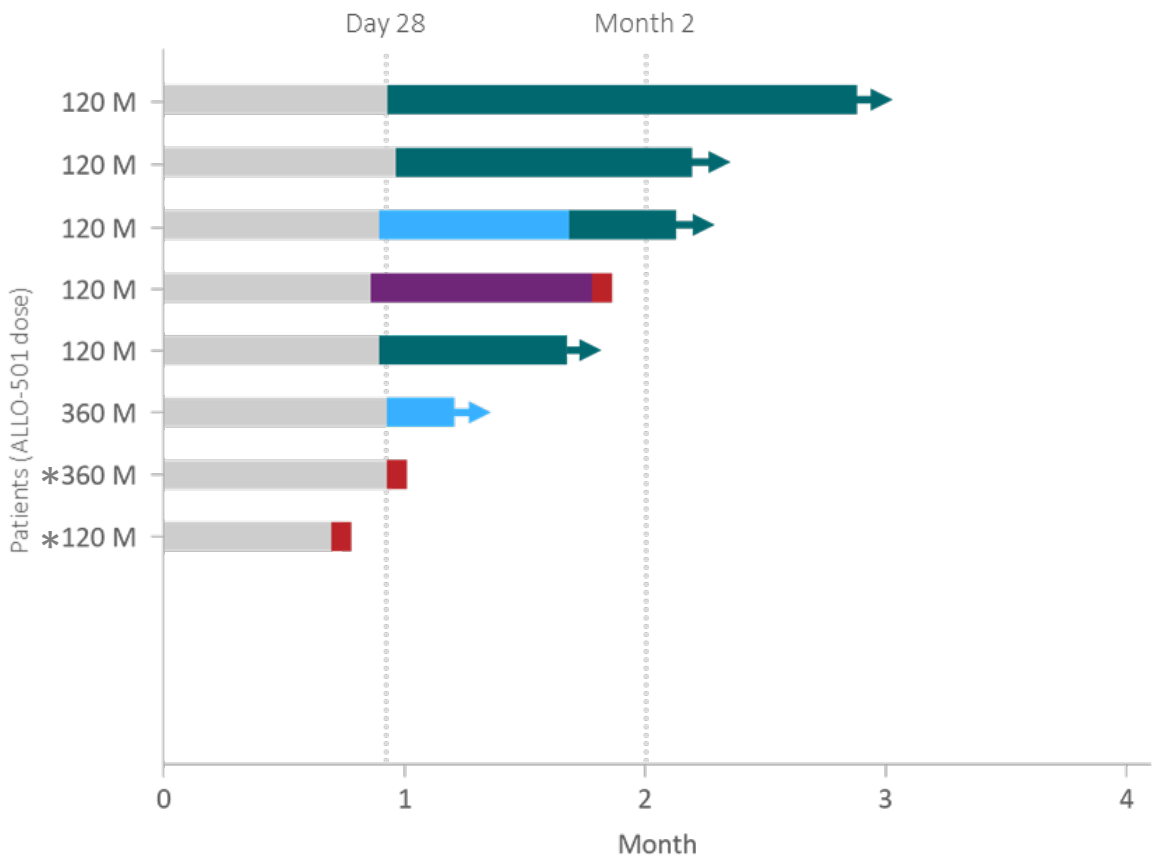
Data Cutoff Date: May 11, 2020

Nine of Twelve Responders Remain in Response



ALLO-647: 39 mg

Median follow up: 4.3 months (1.0, 6.1)



ALLO-647: 90 mg

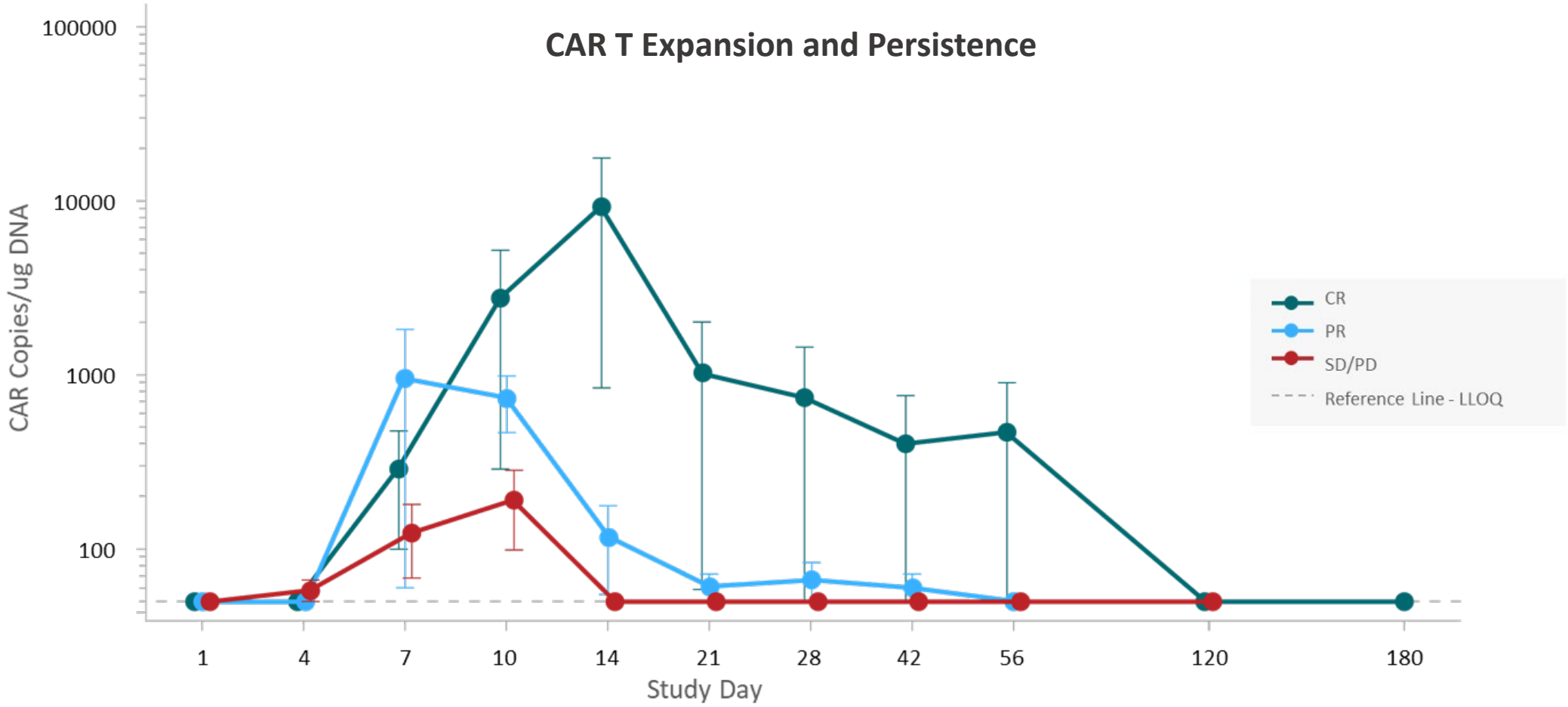
Median follow up: 1.9 months (0.7, 2.6)

One patient who progressed after a PR was re-dosed with ALLO-501 (120 x 10^6) and Flu/Cy/90mg ALLO-647 and achieved a CR

* Received prior AutoCAR T

Data Cutoff Date: May 11, 2020

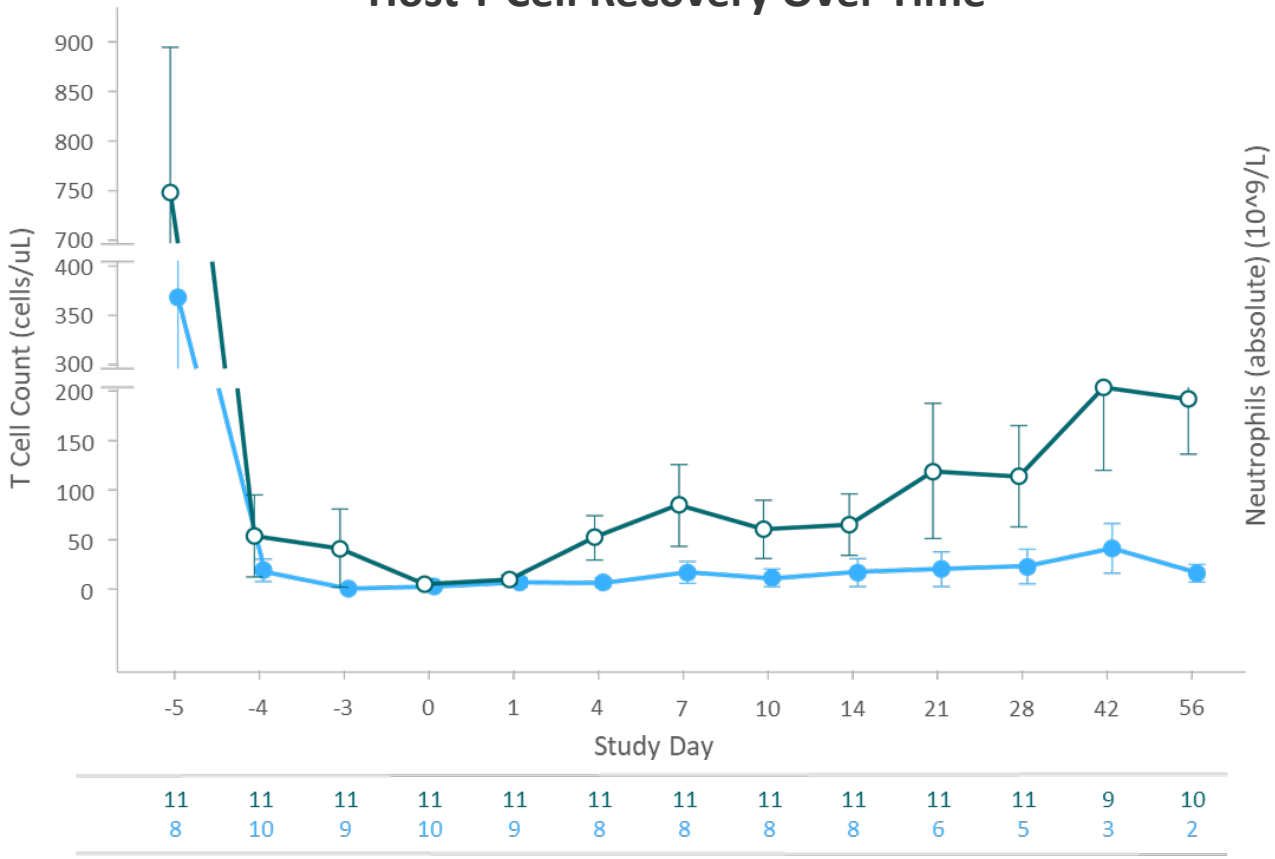
AlloCAR T Cell Expansion Is Associated with Clinical Response



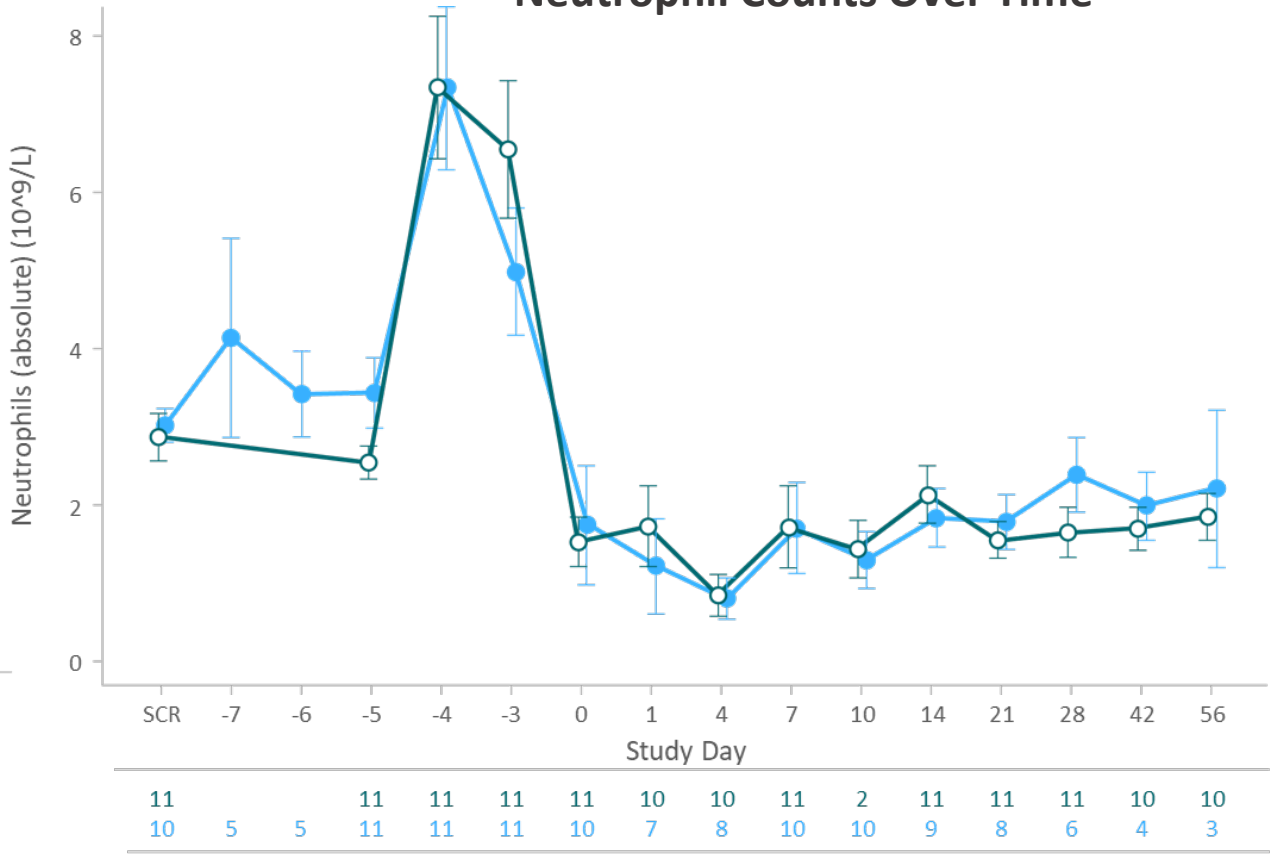
CR	6	5	5	6	6	6	6	2	2	1	1
PR	4	4	4	4	4	4	4	4	3		
SD/PD	6	6	6	6	6	6	5	2	2	1	

ALLO-647 Mediates Selective Lymphodepletion

Host T Cell Recovery Over Time



Neutrophil Counts Over Time

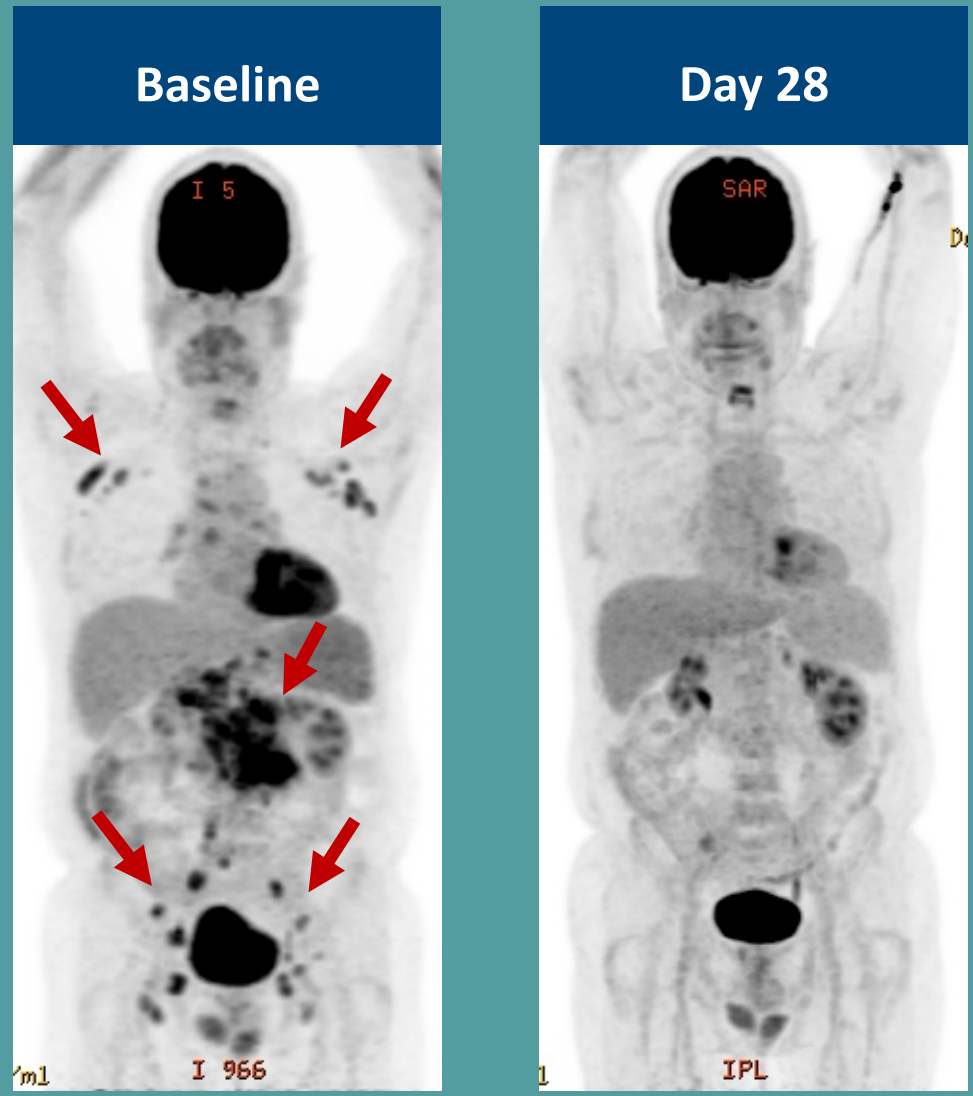


- No difference in neutrophil kinetics between ALLO-647 treatment groups
- Median time to Platelet >=100K is 8 days for 90mg ALLO-647 dose cohort

ALLO-501 Patient Case Study

- **120 x 10^6 CAR^+ T cells after Flu/Cy + 39mg ALLO-647**
- 70-year-old male with follicular lymphoma
- FLIPI 4, stage 4 (bone marrow infiltration), splenic involvement
- Primary refractory with 4 prior lines of therapy (best outcome)
    1. R-Benda x 4 cycles (PD)
    2. R-CHOP x 2 cycles (SD)
    3. R-Len x 2 cycles (PD)
    4. Copanlisib x 2 cycles (SD)
- Safety:
    - ALLO-647-related: Gr1 pyrexia

Patient remains in CR at Month 4



Courtesy of Sattva Neelapu

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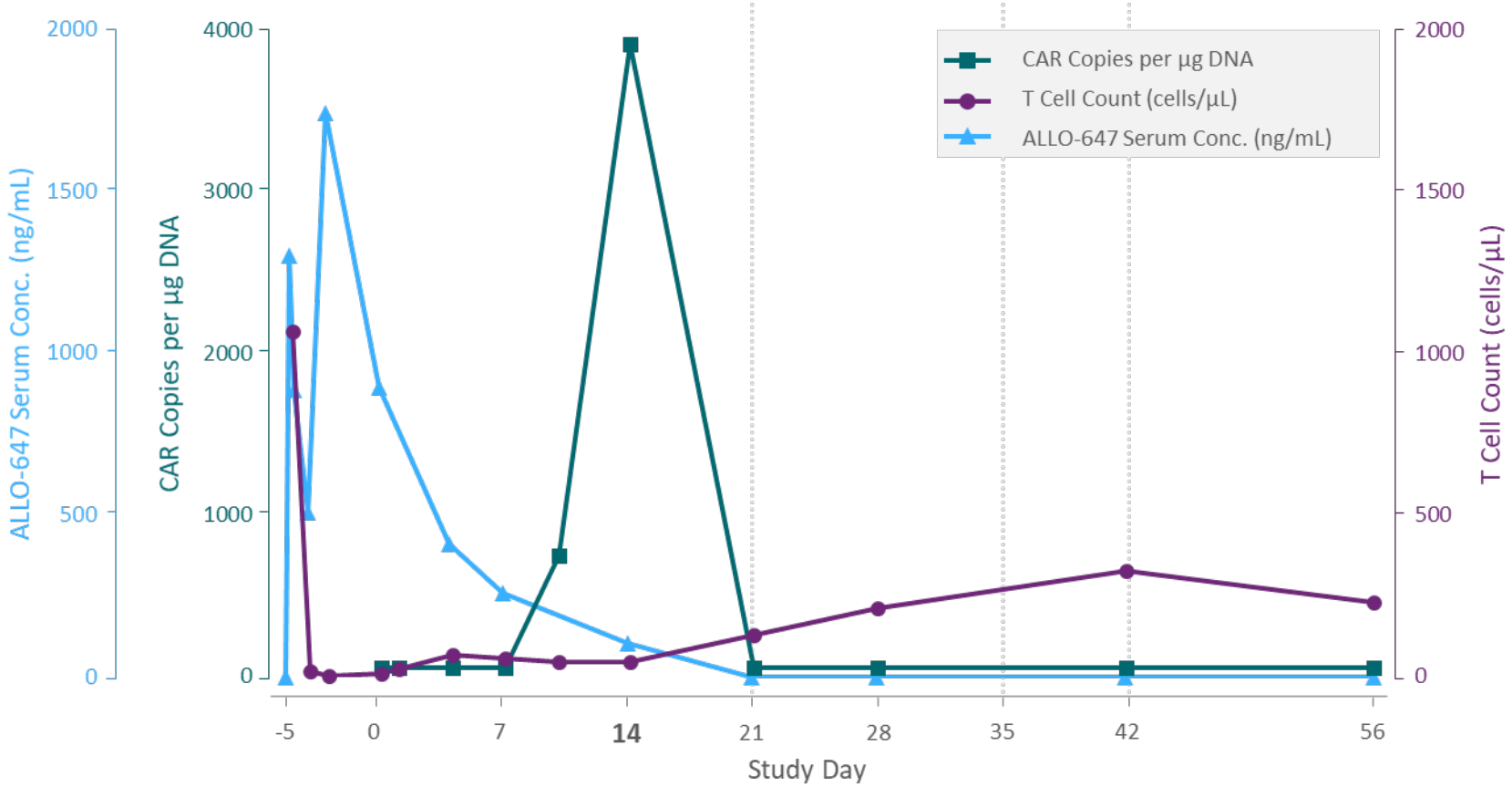
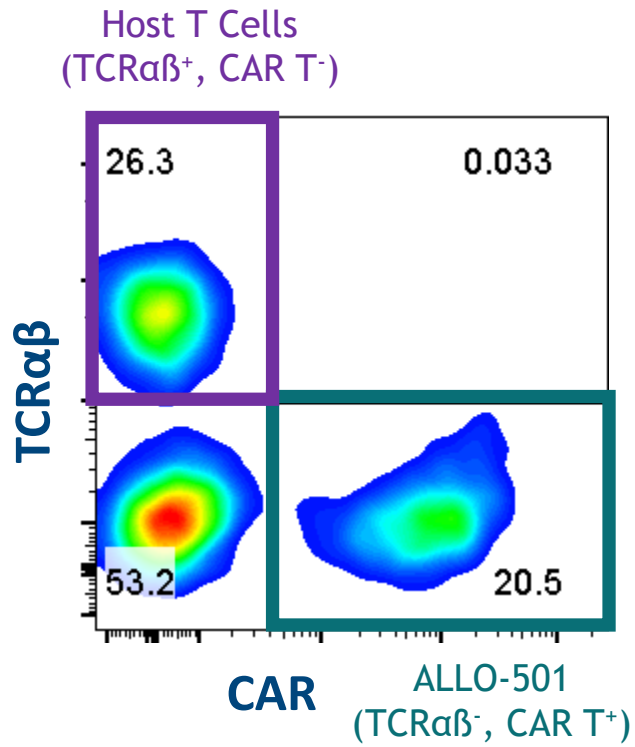
ALLO-501 Patient Case Study:
AlloCAR T Expansion Occurs During Lymphodepletion Window

ALLO-647 PK, CAR Expansion and T Cell Recovery Over Time



Flow Plot of Patient Lymphocytes on D14



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Conclusions

- **ALLO-501 and ALLO-647 based lymphodepletion (LD) were well tolerated**
  - No DLT, GvHD or ICANS
  - Manageable CRS and no >Gr3 infections
- **AlloCAR T cell expansion was associated with responses**
- **Anti-tumor activity was observed across all cell dose levels**
  - Overall: ORR observed in 12/19 (63%) patients with 37% CR
  - 9 of the 12 (75%) responding patients remain in response as of the data cutoff
  - 1 patient achieved CR after the 2nd infusion of ALLO-501
- **ALLO-647 delays host T cell recovery**
  - Higher dose ALLO-647 appear to associate with deeper responses (50% CR)
- **Optimization of LD and patient follow-up is ongoing**
- **Phase I trial of ALLO-501A (ALLO-501 minus rituximab switch) is enrolling**

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Rafael Amado, M.D.

The Road Ahead

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ALPHA Trial Enrolled A Diverse, Heavily Pre-Treated NHL Population

ALPHA Patient Demographics

Relapsed/Refractory NHL patients with advanced-stage disease

- Median of 4 prior treatments (range 2-8)
- Median duration of response to the last regimen is one month
- 95% had Stage III/IV disease
- 86% were refractory
- 41% had previous ASCT
- 18% had failed autologous CAR T

Study provides proof-of-concept activity in two subtypes of NHL

- 64% of patients had r/r DLBCL
- 36% of patients had r/r FL

All 3 evaluable patients had a poor outcome:

- Two patients had PRs lasting <3 months on axi-cel
- One patient had PD on liso-cel

Additional molecular characterization ongoing

ALLO-501 ALPHA Phase 1 *CAR T Naïve* Efficacy Data

Initial Responses Comparable to Autologous CAR T Therapies

Cell Dose and LD regimen	ALLO-501 ALLO-647 39mg Patients (N=10)	ALLO-501 ALLO-647 90mg Patients (N=6)	All ALLO-501 Ph1 (N=16)	Autologous Ph1 Trials in NHL*	Autologous Ph2 Trials in NHL**
ORR, n (%)	7 (70%)	5 (83%)	12 (75)%	64-80%	50-73%
CR, n (%)	3 (30%)	4 (67%)	7 (44%)	56-60%	32-53%

** Kymriah and liso-cel trials include FL and MCL patients; ASH 2015; Schuster, NEJM, 2019; Abramson, ASH 2019*

*** Yescarta, Kymriah FDA labeling information and Abramson ASH 2019; Based upon mITT analyses*

ALPHA Data Cutoff Date: May 11, 2020

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Initial ALPHA Safety Data Compare Favorably to Autologous Therapies*

AE of Interest (≧Gr3)	ALLO-501 Ph1 (N=22)	axi-cel Ph2* (N=101)	tisa-cel Ph2* (N=111)	liso-cel Ph2* (N=269)
Cytokine Release Syndrome	**5%**	13%	23%	2%
ICANS	**-**			
Neurologic Events		31%	18%	10%
Graft-versus-Host Disease	**-**	-	-	-
Infection	**9%**	23%	25%	12%
Neutropenia	**64%**	93%	81%	60%
Infusion Reaction	**5%****	-	-	-

ALLO-501 safety profile increases potential outpatient opportunity

** Neelapu NEJM 2017, Schuster NEJM 2019, and Abramson ASH 2019*

*** Attributed to ALLO-647*

ALLO-501 Compares Favorably Across Other Criteria

Study	ALLO-501	Autologous Therapies*		
Product manufactured for all patients	**100%**	1-7% manufacturing failure		
Time to Treatment	**5 days** *Enrollment to treatment*	**axi-cel**	**tisa-cel**	**liso-cel**
		17 days *Leukapheresis to cell delivery*	54 days *Enrollment to treatment*	Not reported
Patients not treated	**4%**	9%	34%	Not reported
Ease of re-dosing	**Yes**	May require re-manufacturing		

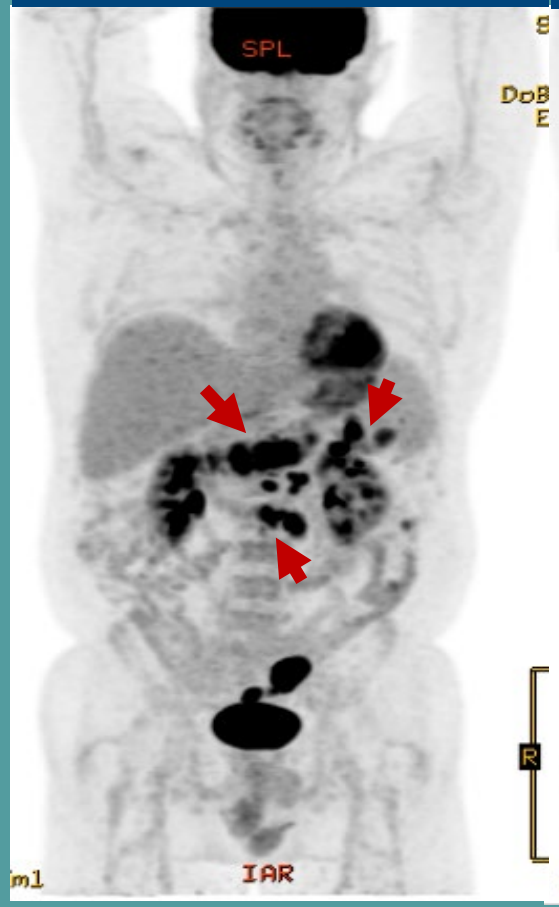
Almost all enrolled patients were treated with ALLO-501

** Neelapu NEJM 2017, Schuster NEJM 2019, and Abramson ASH 2019*

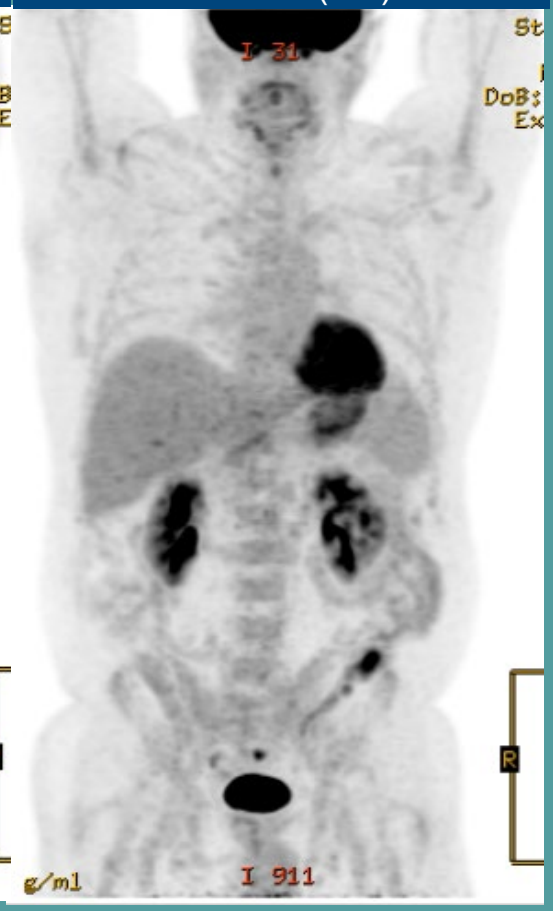
ALLO-501 Patient Case Study 2: Redosing after Disease Progression

First ALLO-501 Treatment

Baseline

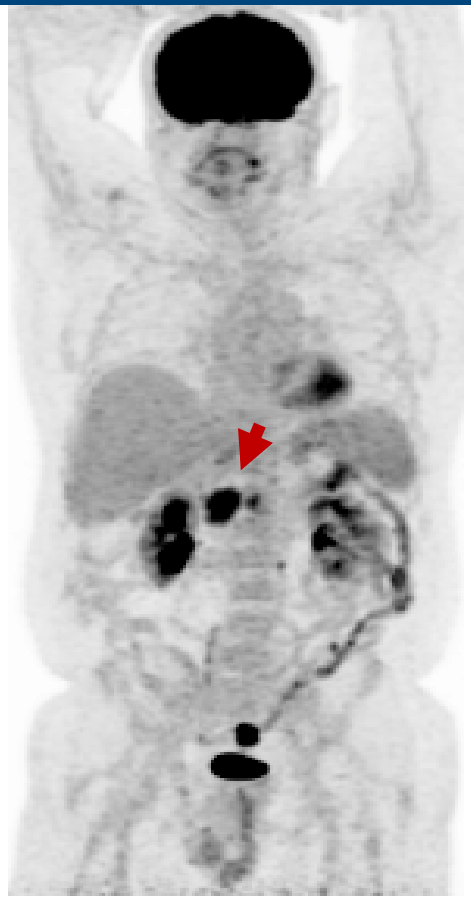


1 Month (PR)

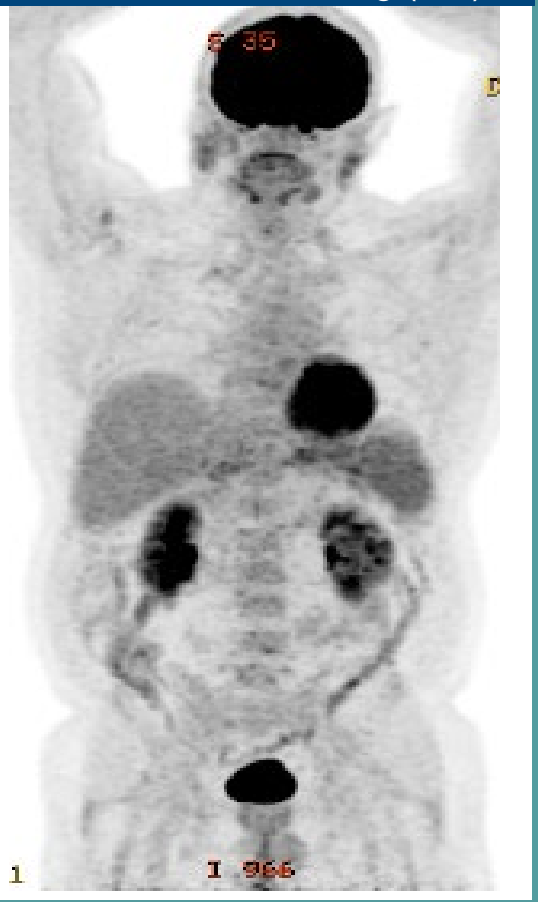


Month 2 PD: ALLO-501 Redosing

Recurrence



2 months Post-Redosing (CR)



Courtesy of Sattva Neelapu

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Key Questions for the ALLO-501 ALPHA Study

- ☑ Can ALLO-501 be successfully manufactured?
- ☑ Can ALLO-501 be safely administered without causing clinically relevant Graft vs. Host Disease?
- ☑ Can ALLO-647 be safely administered and allow a sufficient window of lymphodepletion to allow ALLO-501 expansion and persistence?
- ☑ Can ALLO-501 provide complete responses across multiple histologies?
- ONGOING Can ALLO-501 provide durable responses?

Q&A

- David Chang, M.D., Ph.D.
- Rafael Amado, M.D.
- Sattva Neelapu, M.D.
- Eric Schmidt, Ph.D.

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Leading Today, Creating Tomorrow

ALLO-501 is an anti-CD19 allogeneic CAR T (AlloCAR T™) therapy being jointly developed under a collaboration agreement between Servier and Allogene based on an exclusive license granted by Cellectis to Servier. ALLO-501 uses Cellectis technologies. Servier grants to Allogene exclusive rights to ALLO-501 in the U.S. while Servier retains exclusive rights for all other countries.