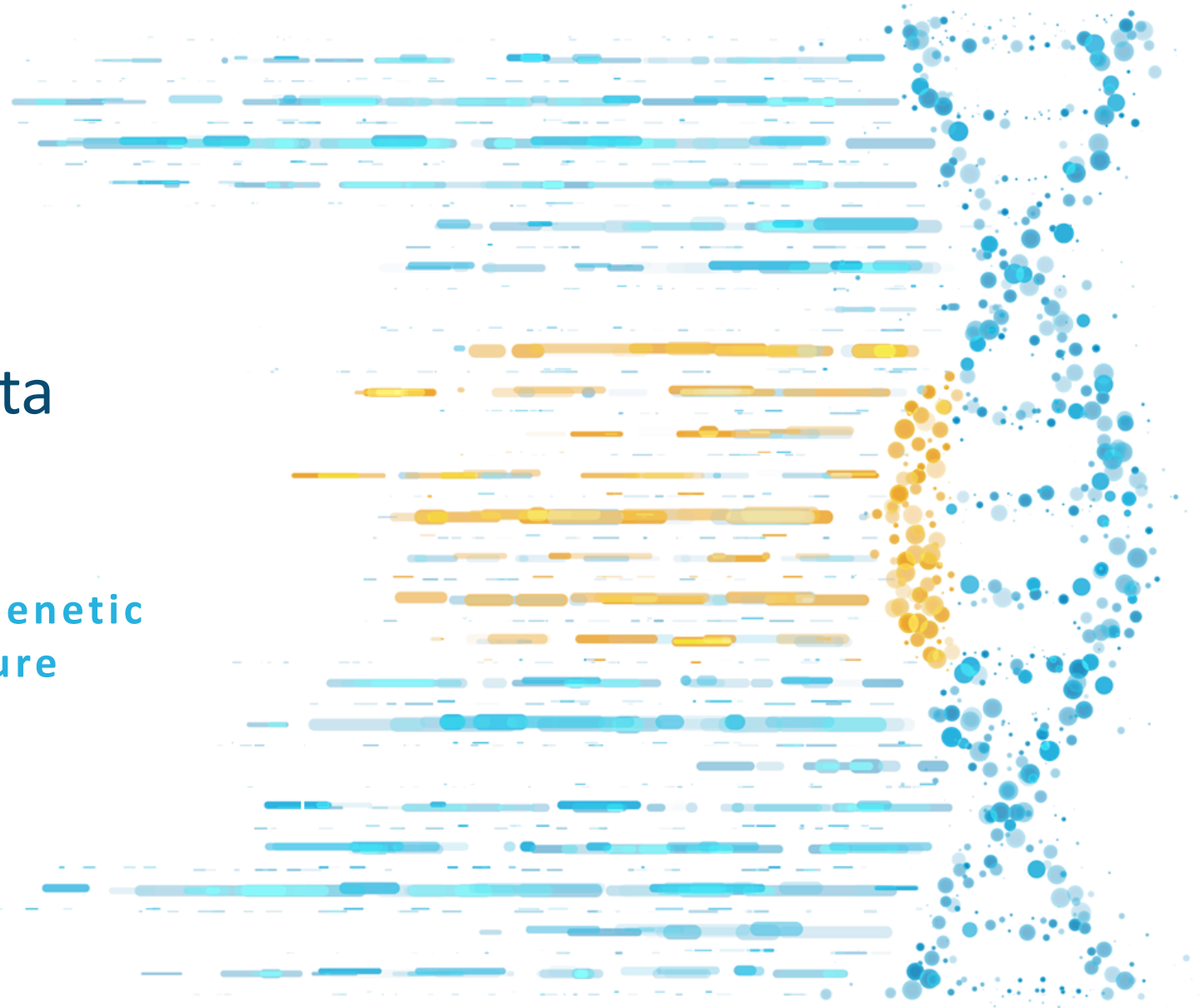




# P-BCMA-ALLO1 Clinical Data Conference Call

A New Class of Cell Therapies & Genetic  
Medicines with the Capacity to Cure

SEPTEMBER 28, 2024



# Forward Looking Statements and Disclaimers

This presentation and any accompanying oral commentary have been prepared by Poseida Therapeutics, Inc. (the “Company,” “we” or “our”) and contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts and include, without limitation, statements related to future events; our future financial performance or condition; business strategy; expected timing and plans with respect to development milestones, clinical trials, and regulatory and manufacturing activities; estimated market opportunities for product candidates; potential capabilities and benefits of our technology platforms and product candidates, including the efficacy and safety profile of such product candidates; our plans and strategy with respect to developing our technologies and product candidates; our ability to exploit and consummate additional business development opportunities; statements regarding the upfront payment and other potential fees, milestone and royalty payments we may receive pursuant to our collaboration agreements; future results of anticipated development efforts; and the competitive landscape, commercial opportunities and analogs. Words such as “expect(s),” “feel(s),” “believe(s),” “will,” “may,” “anticipate(s),” “potentially” or negative of these terms or similar expressions are intended to identify forward-looking statements. These forward-looking statements are based on management's current expectations of future events only as of the date of this presentation and are subject to a number of important risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to: the fact that interim data from the Company's clinical trials may change as more patient data become available and remain subject to audit and verification procedures that could result in material differences from the final data; our ongoing and planned clinical trials; risks associated with conducting clinical trials; whether any of our product candidates will be shown to be safe and effective; risks and uncertainties associated with development and regulatory approval of novel product candidates in the biopharmaceutical industry; the fact that we will have limited control over the efforts and resources that our collaborators devote to advancing development programs under our respective collaboration agreements; the fact that we may not receive the potential fees, reimbursements and payments under the collaboration agreements; the ability of our collaborators to early terminate the collaborations, such that we may not fully realize the benefits of the collaborations; risks and uncertainties associated with conducting clinical trials; our ability to finance continued operations; our reliance on third parties for various aspects of our business; competition in our target markets; our ability to protect our intellectual property; our ability to retain key scientific or management personnel; and other risks and uncertainties described in our filings with the Securities and Exchange Commission (the “SEC”), including under the heading “Risk Factors”. Except as required by law, we assume no obligation to update these forward-looking statements, or to update the reasons why actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future.

This presentation discusses our product candidates that are under preclinical study and in clinical trials, and which 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 our product candidates for the therapeutic use for which they are being studied.

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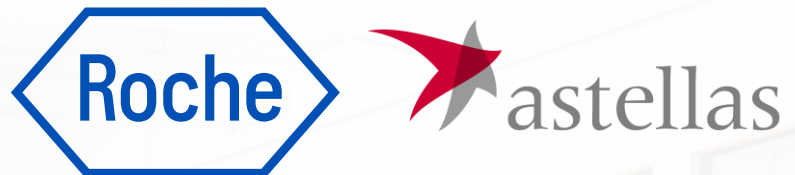
# Agenda

Topic	Presenter	Time
<b>Introduction</b>	<b>Kristin Yarema, Ph.D.</b> Chief Executive Officer, Poseida Therapeutics	5 Minutes
<b>A Phase 1 Study of P-BCMA-ALLO1, a Non-viral, Allogeneic BCMA Directed CAR-T in Relapsed/Refractory Multiple Myeloma (RRMM)</b>	<b>Bhagirathbhai Dholaria, M.D.</b> Associate Professor of Medicine Malignant Hematology & Stem Cell Transplantation Vanderbilt University Medical Center, Nashville, TN, USA	10 Minutes
<b>Fireside Chat/Panel Discussion</b>	<i>Panelists:</i> <b>Bhagirathbhai Dholaria, M.D.</b>  <b>Tom Martin, M.D.</b> Clinical Professor of Medicine, Adult Leukemia and Bone Marrow Transplantation Program and Director of Hematology, Blood and Marrow Transplantation and Cellular Therapy at UCSF, and Co-leader of the Cancer Immunology & Immunotherapy Program at the UCSF Helen Diller Family Comprehensive Cancer Center  <i>Moderator:</i> <b>Syed Rizvi, M.D.</b> Chief Medical Officer, Poseida Therapeutics	30 Minutes
<b>Concluding Remarks</b>	<b>Kristin Yarema, Ph.D.</b> Chief Executive Officer, Poseida Therapeutics	15 Minutes

On a mission to advance a new class of cell therapies & genetic medicines

## ALLOGENEIC CAR-T

The Future of Cell  
Therapy is Allo



 **POSEIDA**  
THERAPEUTICS

## GENETIC MEDICINES

Non-viral Delivery for Gene  
Insertion and Gene Editing  
to Enable Access for All  
Patients

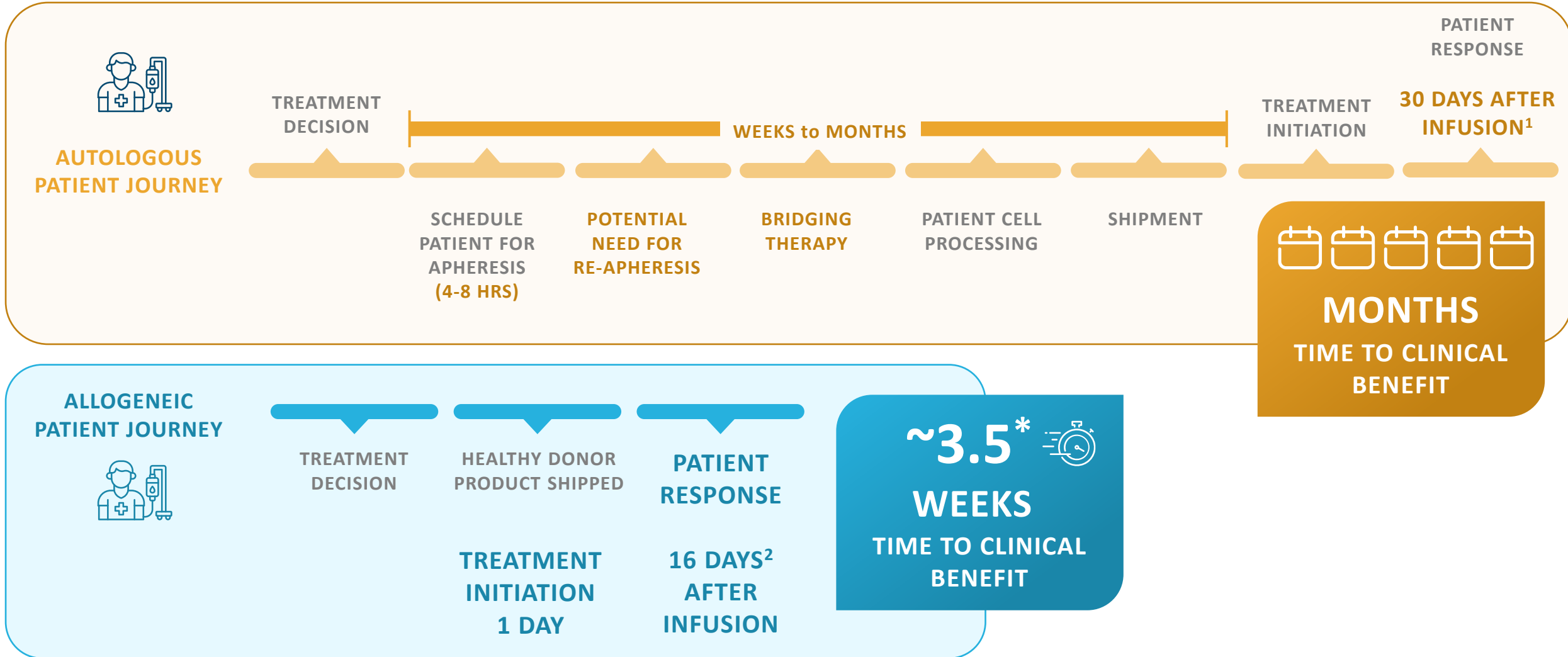


*"Top 10 Public Gene Editing Company"*

## UNMATCHED PLATFORM

Innovating with powerful, proprietary, and differentiated genetic engineering technologies

# An allogeneic approach can greatly simplify and enable patient access to transformational CAR-T



# With a bold vision, Poseida is emerging as an industry leader in allogeneic CAR-T

## POSEIDA'S VISION:

Our T<sub>SCM</sub>-rich allogeneic CAR-T will enable all patients who can benefit from transformational cell therapy to do so

“Built in” product differentiation through **unique T<sub>SCM</sub>-rich CAR-T approach**

**Fully proprietary genetic engineering toolkit** designed for T<sub>SCM</sub>-rich allo CAR-T

**Clinical proof-of-concept delivered** through lead P-BCMA-ALLO1 program





**Manufacturing platform advancing in lockstep** with clinical development

Robust and growing **multi-asset pipeline**

**Allo CAR-T company of choice** for top pharma (Roche, Astellas)

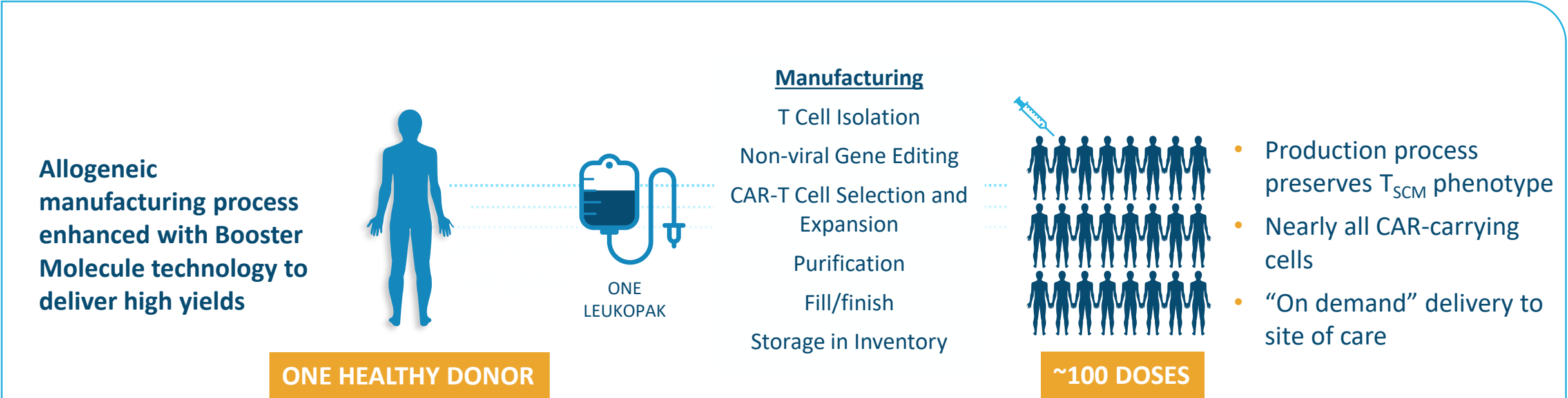
**Holistic systems engineering approach** to allogeneic cell therapy

# Poseida has built the full set of capabilities needed for success in allogeneic cell therapy

	OTHERS	POSEIDA SYSTEM	POSEIDA ADVANTAGE
 <b>CELL TYPE</b>	<ul style="list-style-type: none"> <li>Differentiated T cells</li> <li>Variety of other immune cell types</li> </ul>	<ul style="list-style-type: none"> <li>T stem cell memory cells (T<sub>SCM</sub>)</li> </ul>	<ul style="list-style-type: none"> <li>Most 'stemness' in product</li> <li>Expected better safety</li> <li>Persistent, self-renewing cells</li> </ul>
 <b>GENE INSERTION (add CAR)</b>	<ul style="list-style-type: none"> <li>Viruses (single-gene capacity)</li> </ul>	<ul style="list-style-type: none"> <li>Nonviral transposon (multigene capacity)</li> </ul>	<ul style="list-style-type: none"> <li>Safety</li> <li>Product purity</li> <li>Multi-CAR products</li> <li>Maintains T<sub>SCM</sub> type</li> </ul>
 <b>GENE EDITING (for alloreactivity)</b>	<ul style="list-style-type: none"> <li>Older technologies with lower fidelity*</li> </ul>	<ul style="list-style-type: none"> <li>Cas-CLOVER, high-fidelity</li> </ul>	<ul style="list-style-type: none"> <li>Safety, quality</li> <li>Maintains T<sub>SCM</sub> type</li> </ul>
 <b>SCALABLE MANUFACTURING</b>	<ul style="list-style-type: none"> <li>Often outsourced</li> <li>Challenging to reach high yields</li> </ul>	<ul style="list-style-type: none"> <li>Wholly-owned onsite GMP facility</li> <li>Booster molecule-enabled yield</li> </ul>	<ul style="list-style-type: none"> <li>Proven CMC capability (≥ 100 dose/batch yields)</li> <li>Scalable, lower cost</li> </ul>

\*E.g., TALEN, Cas9  
 CMC, Chemistry, manufacturing and controls; GMP, good manufacturing practice.

# Poseida’s manufacturing platform, used across all products, delivers T<sub>SCM</sub>-rich products with high purity



**P-BCMA-ALLO1 interim Phase I study data presented at IMS 2024 illustrates our manufacturing capability, using product from 7 manufacturing lots and 6 different qualified donors**

Poseida Data on File



# MULTIPLE MYELOMA: Significant opportunity for allogeneic CAR-T

**Common and incurable** blood cancer, with 12,000 attributable deaths in 2021 in the U.S.<sup>1</sup>

~**179,000** people living with myeloma in the U.S., treated across multiple lines of therapy<sup>1</sup>

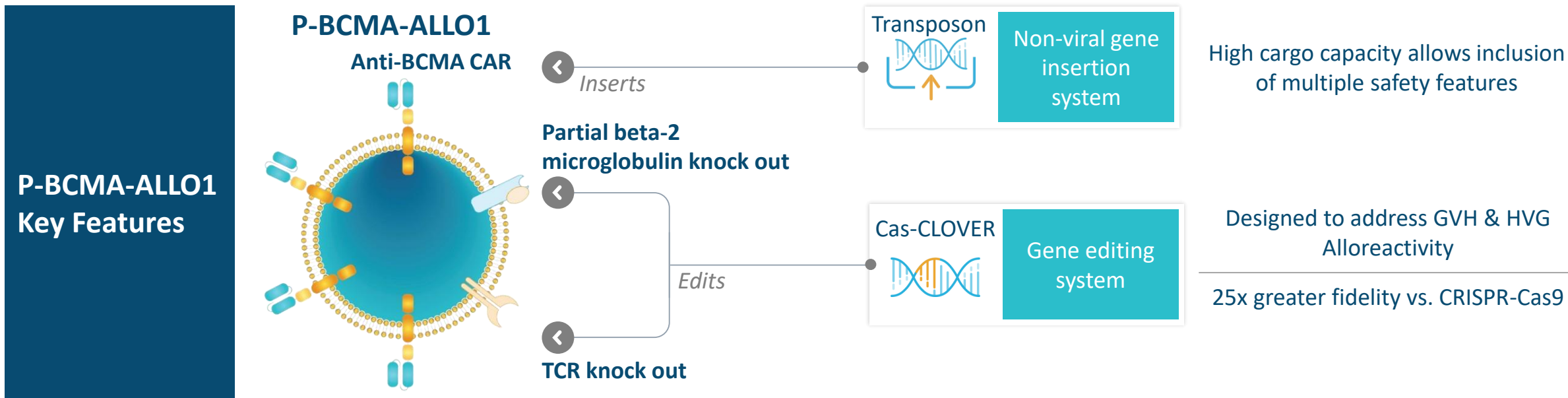
Large market, ~**\$23B<sup>2</sup>** global, **U.S. ~\$14B<sup>2</sup>**, projected to grow at 9-10% annually<sup>2</sup>

**Auto CAR-T** has resulted in meaningful outcomes but **access is limited**, and **safety concerns** limit earlier line adoption

BCMA therapies anticipated to drive market growth, however, **no established treatment post-BCMA exposure**

**Significant room** for potent, safe and accessible novel agents to expand use across **lines of therapy** and **sites of care<sup>2</sup>**

# T<sub>SCM</sub>-rich P-BCMA-ALLO1 is one of the most advanced allogeneic CAR-T in clinical development for multiple myeloma, with a compelling emerging product profile



## Overview and Status

Healthy donor derived non-viral T<sub>SCM</sub>-rich CAR-T therapy with novel VH BCMA binder

Phase 1b clinical trial underway, developed in collaboration with Roche



Regenerative Medicine Advanced Therapy (RMAT) designation for relapsed/refractory multiple myeloma<sup>1</sup>  
Orphan Drug Designation (ODD) for multiple myeloma

1. Adult patients with relapsed/refractory multiple myeloma after three or more prior lines of therapies including a proteasome inhibitor, an immunomodulatory agent and an anti-CD38 antibody. GVH, graft-versus-host; HVG, host-versus-graft.

# Agenda

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<b>Concluding Remarks</b>	<b>Kristin Yarema, Ph.D.</b> Chief Executive Officer, Poseida Therapeutics	15 Minutes

# A Phase 1 Study of P-BCMA-ALLO1, a Non-viral, Allogeneic BCMA Directed CAR-T in Relapsed/Refractory Multiple Myeloma (RRMM)

Bhagirathbhai Dholaria, Mehmet Kocoglu, Andrew Kin, Aravind Ramakrishnan, Leyla Shune, Sidhartha Ganguly, Jose Cruz, Christopher Strouse, Ehsan Malek, Edward Faber, Katherine McArthur, Joanne McCaigue, Samuel DePrimo, Christopher Martin, Sabrina Haag, Jeff D Eskew, Hamid Namini, Ellen Christie, Rajesh Belani, Syed Rizvi, Stacey Cranert, Julia Coronella, Devon J. Shedlock, Caitlin Costello

**International Myeloma Society (IMS) 21st Annual Meeting and Exposition 2024**

Presented by:

**Bhagirathbhai Dholaria, MD**

Associate Professor of Medicine

Malignant Hematology & Stem Cell Transplantation

Vanderbilt University Medical Center, Nashville, TN, USA

VANDERBILT  UNIVERSITY

MEDICAL CENTER

# Disclosures for Bhagirathbhai Dholaria

## **Institutional research support**

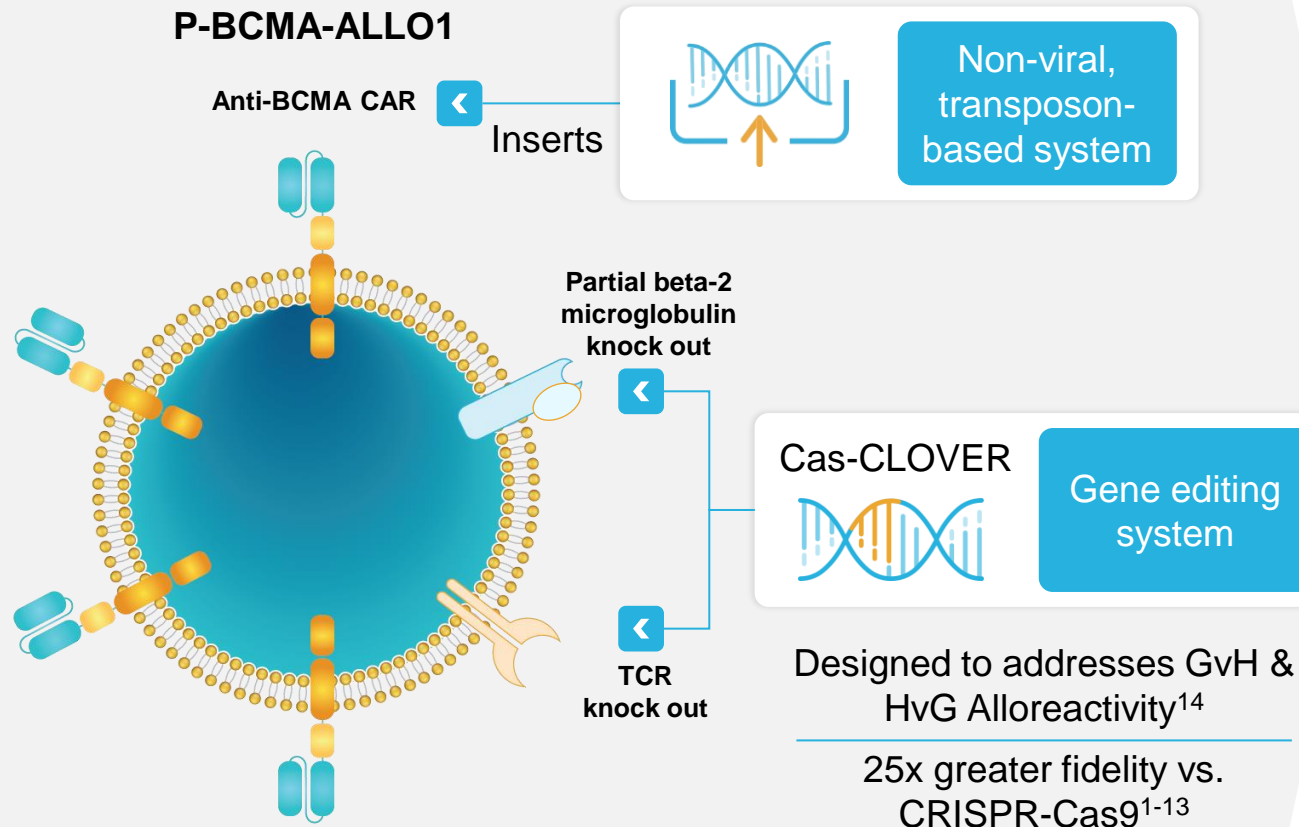
- Janssen, Takeda, BMS, Angiocrine, Poseida, MEI Pharma, Orca Bio, Gilead, Wugen, Atara

## **Advisory board, Consultation**

- Gilead, ADC Therapeutics, Janssen, Roche, Acrotec, Autolus, GSK

**I will be discussing investigational drugs that have not been evaluated or approved by the FDA during my presentation**

# P-BCMA-ALLO1 is an investigational non-viral, stem cell memory T cell-rich, allogeneic CAR-T



## Proprietary technologies used to create P-BCMA-ALLO1 with high percentage of stem cell memory T cell ( $T_{SCM}$ )

- Associated with prolonged persistence and improved antitumor reactivity and expansion

## Drug resistance gene permits positive selection

- ~100% of T cells in final product express the CAR

## Incorporates proprietary safety switch

1. Madison et al., Mol Ther Nucleic Acids. 2022; 2. Alvarez et al., Mol Ther. 31(4), Supp. 1, S1-794. 2023. 3. Data on file, Manuscript in preparation (Poseida Therapeutics) 4. Gilmore et al., NEJM 2021; 5. Longhurst et al., NEJM 2024; 6. Ren et al., Clin Cancer Res., 2017; 7. Antoniani et al., Blood. 2018; 8. Georgiadis et al., Mol Ther. 2018; 9. Webber et al., Nature Comm., 2019; 10. Fix et al., J Immunother Cancer. 2022; 11. Ottaviano et al. Sci. Trans. Med., 2022; 12. Zhang et al., Nature., 2022; 13. Cancellieri et al., Nature Genetics 2023. 14. Mohty R and Lazaryan A (2024) "Off-The-Shelf" allogeneic chimeric antigen receptor T-cell therapy for B-cell malignancies: current clinical evidence and challenges. Front. Oncol. 14:1433432.

# P-BCMA-ALLO1 Phase 1 background and methods

## Phase 1, open-label, dose escalation study in patients with relapsed/refractory multiple myeloma

- Must have had  $\geq 3$  prior lines of therapy including a PI, IMiD & CD38 mAb or be triple refractory
- **Prior BCMA targeting therapy allowed**
- ECOG 0 or 1

- **Primary Objectives:** Safety and MTD/RDE
- **Secondary Objectives:** Anti-myeloma effect; cell dose & lymphodepletion regimen selection

## Dosing Information

Arm/LD dose (mg/m <sup>2</sup> )*	P-BCMA-ALLO1 Dose (cells/kg)	Total Patients <sup>†</sup>
Arm S (Cy 300/ Flu 30)	Range of 0.25-6 X 10 <sup>6</sup>	N=25
Arm A (Cy 500/ Flu 30)	2 x 10 <sup>6</sup>	N=19
Arm B (Cy 1000/ Flu 30)	2 x 10 <sup>6</sup>	N=10
Arm C (Cy 750/ Flu 30)	2 x 10 <sup>6</sup>	N=23

## Phase 1b enrolling patients with Arm C lymphodepletion

<sup>†</sup> Arm S includes 3 retreated subjects (received second lymphodepletion regimen followed by second P-BCMA-ALLO1 cell dose) and 1 subject treated with two P-BCMA-ALLO1 cell doses following one LD; Arm C includes 2 retreated subjects \* Flu/Cy given  $\times 3$  days. All patients in arms A, B and C dosed around Cohort 2 P-BCMA-ALLO1 cell dose with range of 1.822 to  $< 6.0 \times 10^6$  cells/kg. BCMA, B cell maturation antigen. CAR-T, chimeric antigen receptor T-cell; CD38, cluster of differentiation 38; Cy, cyclophosphamide; ECOG-PS, Eastern Cooperative Oncology Group Performance Status; Flu, fludarabine; IMiD, immunomodulatory imide drug; LD, lymphodepletion; mAb, monoclonal antibody; MTD, maximum tolerated dose; PI, protease inhibitor; RRMM, relapsed/refractory multiple myeloma; RDE, recommended dose for expansion.

# ALL PATIENTS: P-BCMA-ALLO1 Phase 1 demographics & baseline characteristics

Demographics/Characteristics	Total (n=72)
Median age, yr (min, max)	67 (33, 85)
Female/male, n (%)	39 (54) / 33 (46)
Time since diagnosis, yr (min, max)	5.6 (0.9, 19.1)
<b>High risk cytogenetics, n (%)**</b>	<b>50 (69)</b>
ECOG (Baseline) PS, 0 / 1 n (%)	21 (29) / 51 (71)
<b>Extramedullary disease, n (%)</b>	<b>19 (26)</b>
<b>Race, n (%)</b>	White, 48 (67), <b>Minorities, 24 (33)*</b>

Prior Therapy Exposure	Total (n=72)
# of prior regimens, median (min, max)	6 (2, 22)
<b>Prior anti-BCMA/talquetamab therapy, n (%)</b>	<b>31 (43)</b>
Prior ASCT (n, %)	42 (58)

**Study population includes heavily pre-treated & high-risk patients, many of whom received prior BCMA and/or GPRC5D-targeted auto CAR-T or bispecific TCE therapy**

5 Re-Treatment subjects not included on this slide to avoid duplication of demographic information

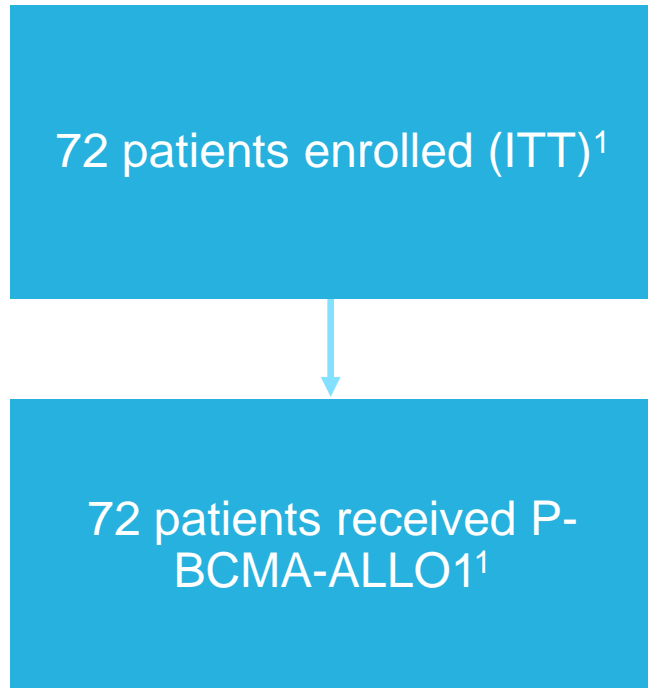
\*Black or African American 16(22), Other 8(11)

\*\*t(4:14), t(14:16); p53 deletion; del17p; t(14:20); gain 1q

ASCT, autologous stem cell transplant; GPRC5D, G protein-coupled receptor class C group 5 member D; TCE, T cell engager.



# Entire intent-to-treat (ITT) patient population treated quickly without apheresis or bridging therapies



- **100% of ITT population underwent lymphodepletion and received P-BCMA-ALLO1**
- No patient apheresis (off-the-shelf drug product)
- No patient required bridging therapy
- No steroid or tocilizumab prophylaxis given
- Median time from enrollment to start of study therapy was one day<sup>2</sup>
- Patients were heavily pretreated with median 6 lines of therapy, maximum of 22
  - 43% - previous BCMA therapy/talquetamab and 69% - high-risk cytogenetics

<sup>1</sup> Interim safety analysis on patients (n=72) given an infusion of P-BCMA-ALLO1 (including cyclic arm patient) and with a minimum of 4 weeks follow-up. Data cutoff for safety analysis was July 31st, 2024 and September 6<sup>th</sup> 2024 for efficacy analysis.

<sup>2</sup> N=72, analysis excludes patient retreated with P-BCMA-ALLO1. ITT, intent to treat.

# P-BCMA-ALLO-1 Phase 1 study: Interim safety results

*No G3 or higher CRS or ICANS, no GvHD, no HLH/MAS, no Parkinsonism, no cranial neuropathies observed*

CAR-T associated AEs	ARM S N = 25		ARM A N = 19		ARM B N = 10		ARM C N = 23	
	Grade 1/2	Grade 3	Grade 1/2	Grade 3	Grade 1/2	Grade 3	Grade 1/2	Grade 3
<b>Cytokine release syndrome (CRS), n (%)</b>	4 (16)	<b>0</b>	4 (21)	<b>0</b>	4 (40)	<b>0</b>	9 (39)	<b>0</b>
Median days to onset, days (range)	9 (4-16)	-	5 (2-14)	-	7 (4-10)	-	7 (4-8)	-
<b>Neurotoxicity (ICANS), n (%)</b>	1 (4)	<b>0</b>	0	<b>0</b>	1 (10)	<b>0</b>	3 (13)	<b>0</b>
Median days to onset, days (range)	16 (-)	-	-	-	14 (-)	-	4 (3-6)	-
<b>Infections, n (%)</b>	3 (12)	<b>1 (4)</b>	3 (16)	<b>1(5)</b>	4 (40)	<b>4 (40)</b>	7 (30)	<b>4 (17)</b>
Median days to onset days (range)	4 (2, 518)	35 (27-43)*	176 (4, 256)	26 (-)	17 (5-63)	11 (6-20)	11 (4-36)	27 (6-74)

- Dose-levels through  $6 \times 10^6$  cells/kg cleared with no DLTs
- **No GvHD observed at any dose**
- **No Grade 3 or higher CRS/ICANS**
  - Low CRS incidence (27%), Grade  $\leq 2$  in severity
  - Neurotoxicity (Grade  $\leq 2$ ) observed in 5 patients (7%)

- Grade  $\geq 3$  TEAEs were associated mainly with LD and myeloma
- Serious infections were uncommon even in the higher LD arms
- No cases of Parkinsonism

\*Arm S: One arm S subject experienced 2 separate grade 3 infectious events

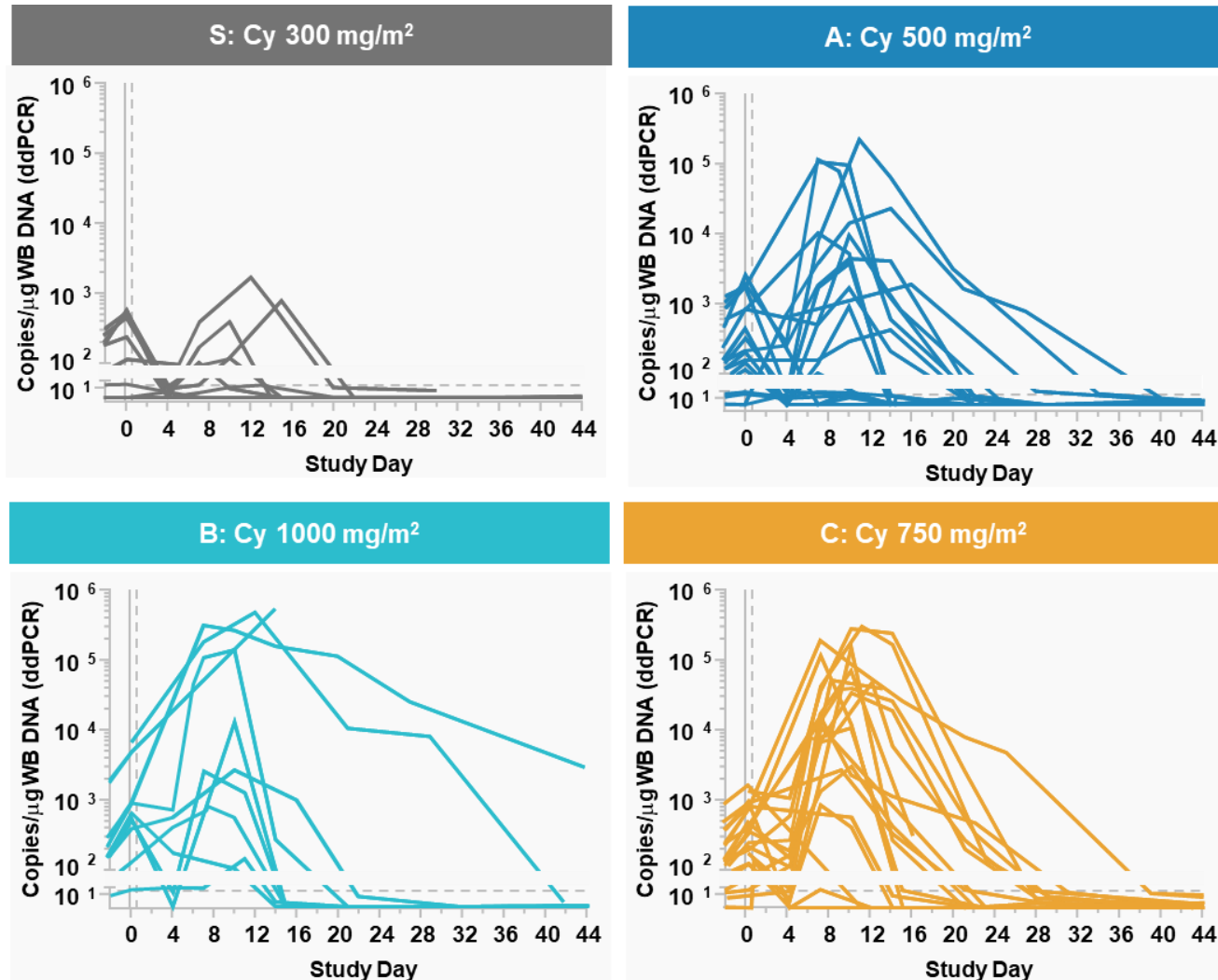
ADC, antibody drug conjugates; BCMA, B cell maturation antigen; DLTs, dose limiting toxicities; ECOG, Eastern Cooperative Oncology Group; GvHD, graft-versus-host disease; HLH, Hemophagocytic lymphohistiocytosis; ICANS, immune effector cell-associated neurotoxicity syndrome; MAS, Macrophage activation syndrome; TEAE, treatment-emergent adverse event; AE, adverse event.

# P-BCMA-ALLO1 has been generally well tolerated (N=77\*)

*Treatment-emergent adverse events (TEAE<sup>1</sup>) in ≥20% of all patients; combined safety including all patients*

Adverse Event	Any Grade	Grade ≥3	Related <sup>1</sup> Grade ≥3
	N(%)	N(%)	N(%)
Patients with TEAEs	76 (99)	66 (86)	42 (55)
<b>Neutropenia</b>	<b>52 (68)</b>	<b>51 (66)</b>	<b>28 (36)</b>
<b>Leukopenia</b>	<b>48 (62)</b>	<b>47 (61)</b>	<b>27 (35)</b>
<b>Thrombocytopenia</b>	<b>40 (52)</b>	<b>25 (33)</b>	<b>14 (18)</b>
<b>Anemia</b>	<b>38 (49)</b>	<b>30 (39)</b>	<b>17 (22)</b>
Fatigue	21 (27)	2 (3)	2 (3)
<b>Cytokine release syndrome (CRS)</b>	<b>21 (27)</b>	-	-
Hypokalemia	20 (26)	2 (3)	-
Hypocalcemia	17 (22)	5 (7)	-
Constipation	17 (22)	-	-
Hypophosphatemia	16 (21)	2 (3)	-
Diarrhea	16 (21)	1 (1)	1 (1)
Nausea	16 (21)	-	-

# Varying lymphodepletion affects CAR-T expansion and persistence



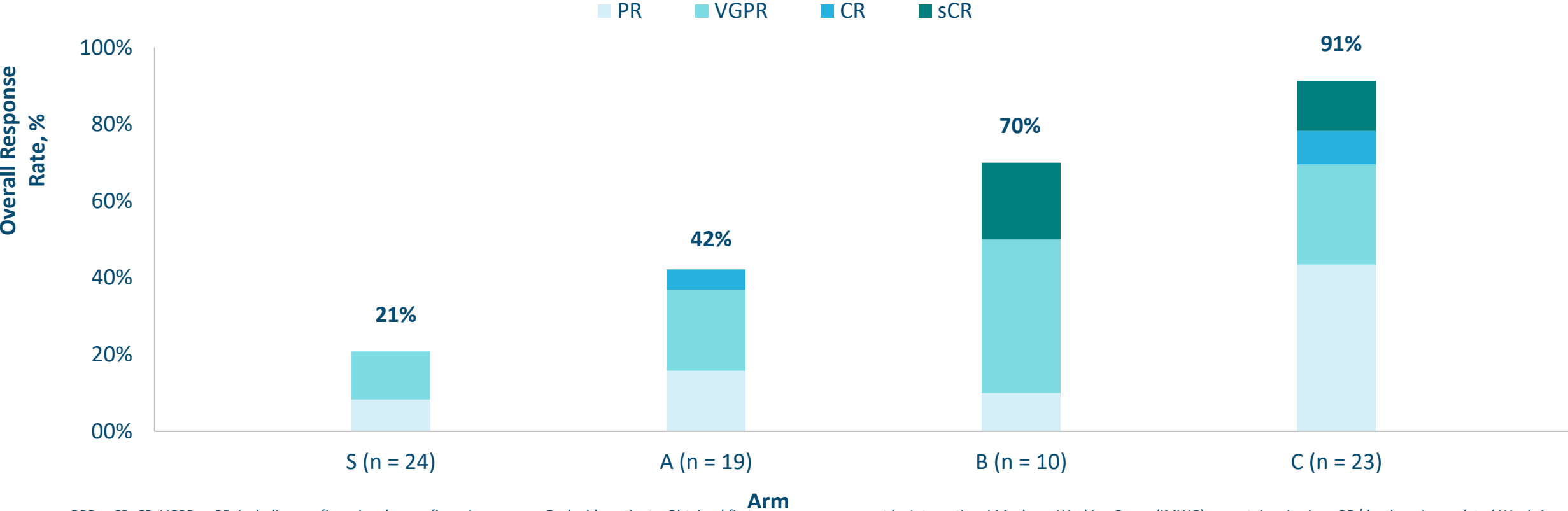
Achieving a critical mass of CAR-T cells in a patient is believed important for optimal response

Lymphodepleting conditioning treatment helps create space for CAR-T cells to divide and proliferate after infusion into a patient

P-BCMA-ALLO1 cells expand and persist more with increased conditioning

# P-BCMA-ALLO1 demonstrated overall response rates (ORR) of up to **91%** when administered with optimized lymphodepletion

Arm S, A, B and C (n = 76)



ORR= sCR, CR, VGPR or PR, including confirmed and unconfirmed responses. Evaluable patients: Obtained first response assessment by International Myeloma Working Group (IMWG) m-protein criteria or PD/death and completed Week 4 visit.

Arm: S = LD – cy 300 mg/m<sup>2</sup>, flu 30 mg/m<sup>2</sup>; A = LD – cy 500 mg/m<sup>2</sup>, flu 30mg/m<sup>2</sup>; B = LD – cy 1000 mg/m<sup>2</sup>, flu 30mg/m<sup>2</sup>; C= LD – cy 750 mg/m<sup>2</sup>, flu 30mg/m<sup>2</sup>. Arm A, B and C subjects dosed around Cohort 2 P-BCMA-ALLO1 cell dose with range 1.822 to < 6.0 × 10<sup>6</sup> cells/kg. Arm S subjects dosed in cohorts -1, 1, 2, 3 (range 0.25 × 10<sup>6</sup> to 7.6 × 10<sup>6</sup> P-BCMA-ALLO1 cells/kg). Notes: Arm S includes 1 Cyclic and 3 Re-Treatment subjects. Arm C includes 2 Re-Treatment subjects. PR, partial response; VGPR, very good partial response; CR, complete response; sCR, stringent complete response.

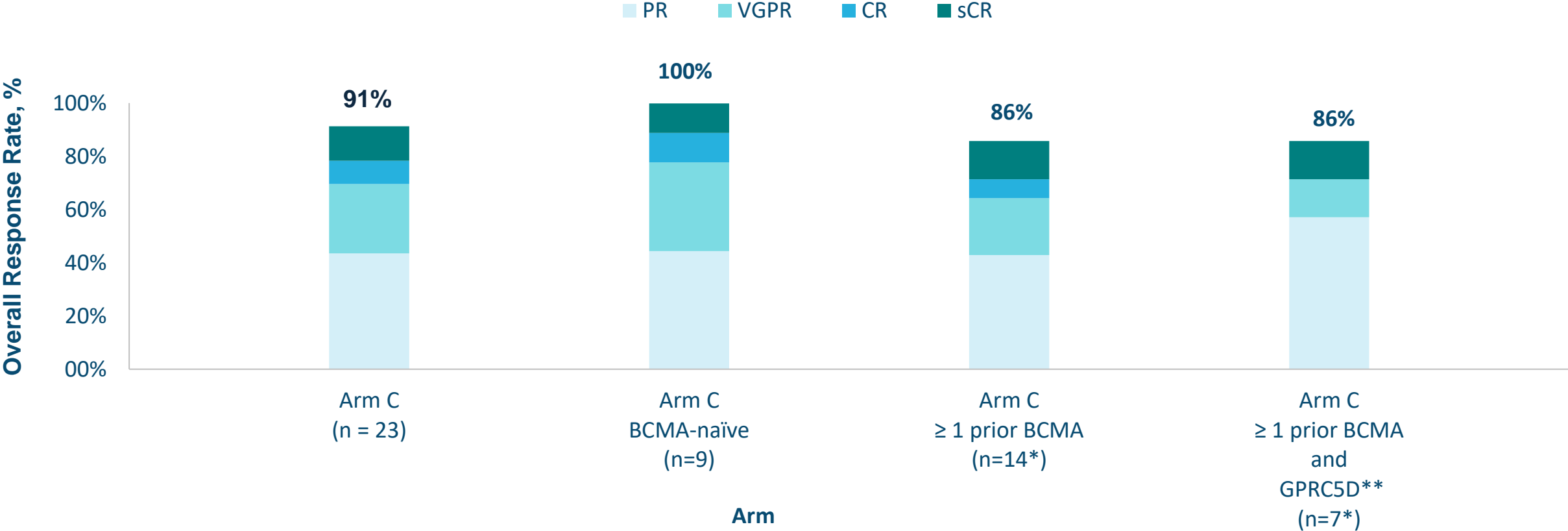
# ARM C: Baseline characteristics & prior therapy

Heavily pretreated patients, most with prior anti-BCMA exposure

Demographics/Characteristics	Total (n=21)	Prior Therapy Exposure	Total (n=21)
Median age, y (min, max)	61 (39, 76)	# of prior regimens, median (min, max)	6 (2, 14)
Female/male, n (%)	11 (52) / 10 (48)	<b>Prior anti-BCMA/talquetamab therapy, n (%)</b>	<b>13 (62)</b>
Time since diagnosis, y, median (min, max)	5.1 (1.0 15.1)	Prior anti-BCMA bispecific only	3 (14)
<b>High Risk Cytogenetics, n (%)**</b>	<b>13 (62)</b>	Prior BCMA auto CAR-T only	2 (10)
ECOG (Baseline) PS, 0 / 1 n (%)	8 (38) / 13 (62)	Prior BCMA auto CAR-T and ADC	1 (5)
<b>Extramedullary disease, n (%)</b>	<b>8 (38)</b>	<b>Prior anti-BCMA bispecific and BCMA auto CAR-T</b>	<b>6 (29)</b>
<b>Race, n (%)</b>	White, 13 (62) Minorities, 8 (38)*	Prior anti-BCMA bispecific, BCMA auto CAR-T, and ADC	1 (5)
		<b>Prior BCMA and talquetamab (GPRC5D)</b>	<b>6 (29)</b>
		<b>Bridging therapy, n (%)</b>	<b>0 (0)</b>
		<b>Prior ASCT, n (%)</b>	<b>14 (67)</b>

Study population includes heavily pre-treated & high-risk patients, many of whom received prior anti-BCMA/talq therapy

# P-BCMA-ALLO1 was highly clinically active in both BCMA-naïve and BCMA-experienced patients

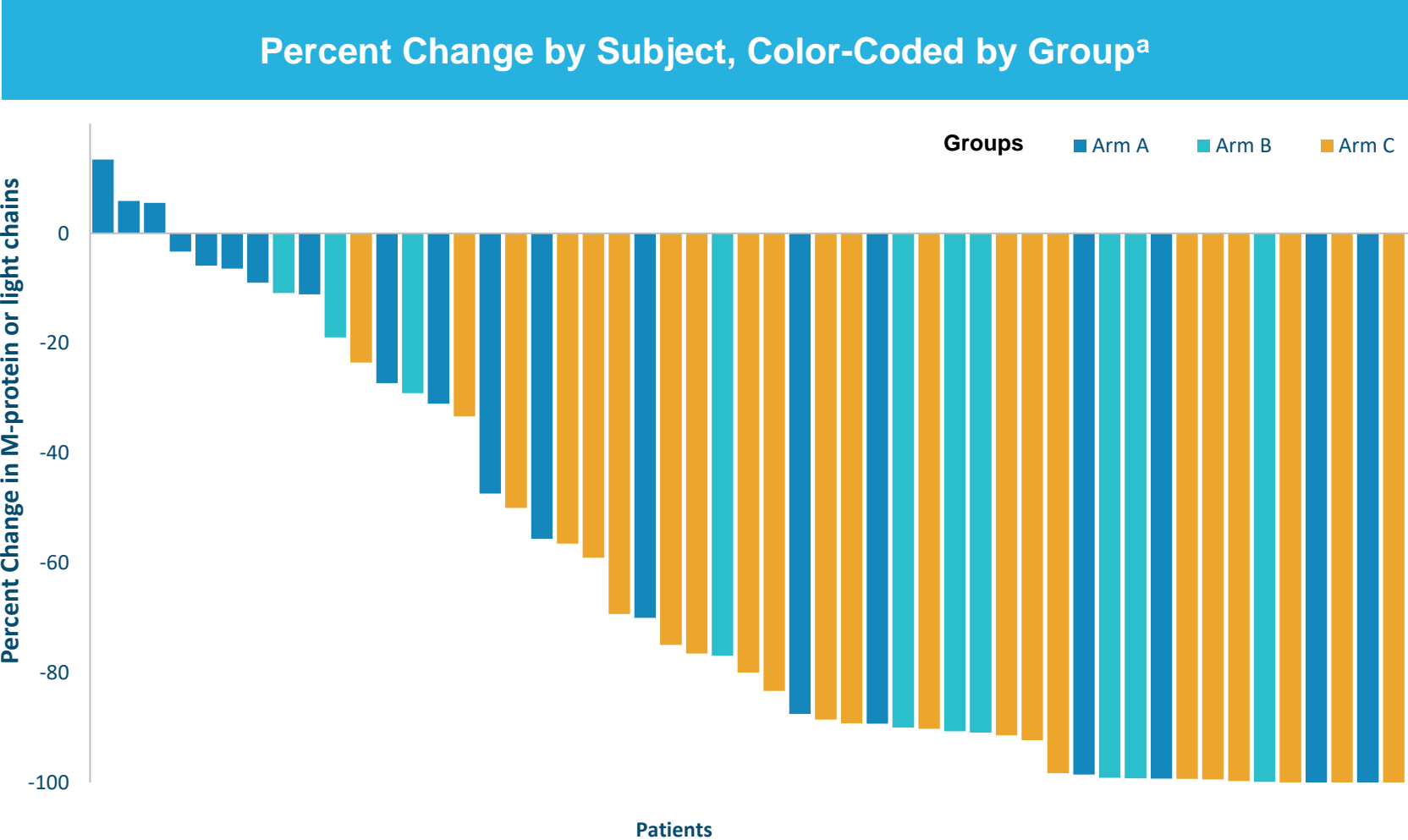


ORR= sCR, CR, VGPR or PR, including confirmed and unconfirmed responses. Evaluable patients: Obtained first response assessment by IMWG m-protein criteria or PD/death and completed Week 4 visit. Arm: C = LD – cy 750 mg/m<sup>2</sup>, flu 30mg/m<sup>2</sup>. All dosed Cohort 2 = Range 2.0 to < 6.0 × 10<sup>6</sup> cells/kg. Note: 2 Re-Treatment subjects included in arm C. \*Includes 1 retreatment subject. \*\*talquetamab, a GPRC5D bispecific T cell engager

# Patients across arms A, B, and C show response in disease markers, with encouraging early mTTR and mDOR

<b>Median Time to Response</b> (Pooled Arms A + B)	<b>Median Duration of Response for Patients with <math>\geq 6</math> Months of Follow Up</b> (Pooled Arms A + B)
<b>16 Days</b> (95% CI 15 - 22)	<b>232 Days</b> (95% CI 158 - 308)

**Note:** Arm C is the least mature cohort (most recently enrolled). Current median follow up of Arm C is less than 3.5 months, therefore DOR could not be estimated at this time



<sup>a</sup>The % change on Y axis is based on the myeloma parameter that was measurable at baseline and is used to determine response on each subject over time, such as SPEP, UPEP or FLC. MTR: median time to response; mDOR: median duration of response; SPEP, serum protein electrophoresis; UPEP, urine protein electrophoresis; FLC, free light chain.



# Patient Case #1: Dramatic resolution of disease in breast, liver and lymph nodes, with marrow clearance

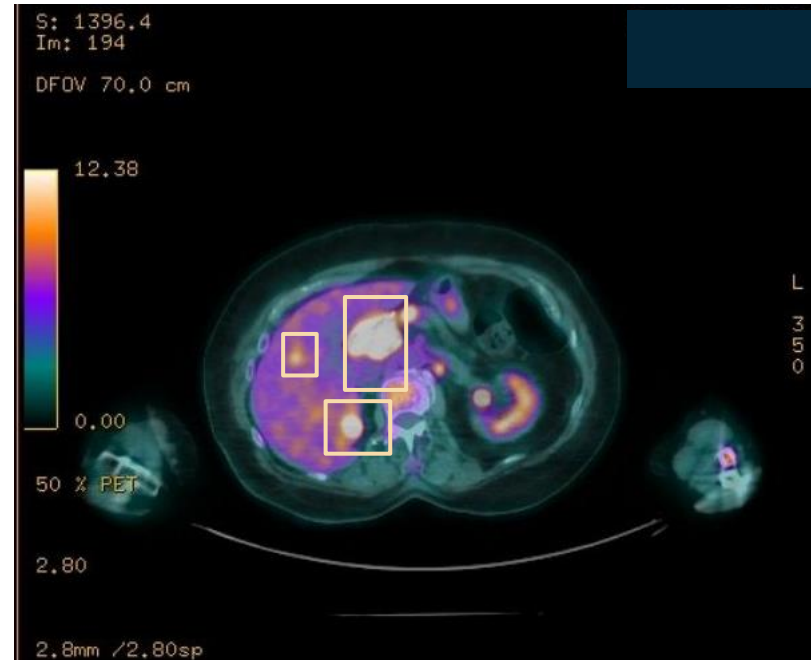
## Patient demographics

Age	Sex	Race
71	Female	White

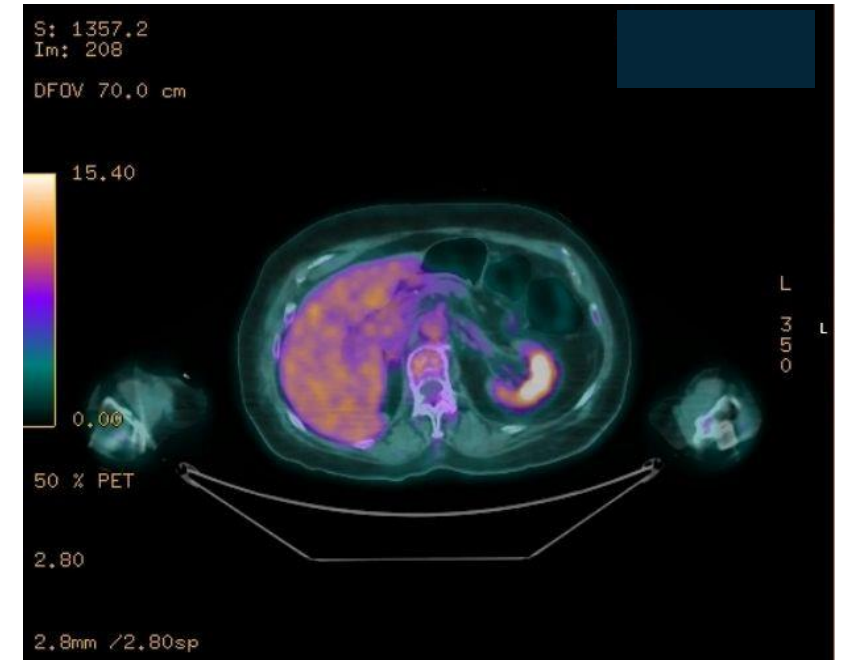
## Disease characteristics

Myeloma subtype	<b>IgA Lambda</b>
High Risk (Y/N)	<b>No</b>
Years since diagnosis	<b>1</b>
Prior lines anti-myeloma therapy	<b>2 (triple-refractory)</b>
Prior BCMA (Y/N)	<b>No</b>

## Baseline PET-CT



## D28 PET-CT



## Patient with high burden multiple myeloma and triple-class refractory

- Involvement of liver, breasts and lymph nodes
- Rapid clearance of myeloma in the vital organs
- Ongoing VGPR at month 5

# Patient Case #2: Rapid, deep response observed in a heavily pretreated patient, refractory to teclistamab

Patient demographics		
Age	Sex	Race
59	Male	White

Disease characteristics	
Myeloma subtype	<b>IgG Lambda</b>
High Risk (Y/N)	<b>Yes</b>
Years since diagnosis	<b>4.3</b>
Prior lines anti-myeloma therapy	<b>4</b>
Prior BCMA (Y/N)	<b>Yes</b>



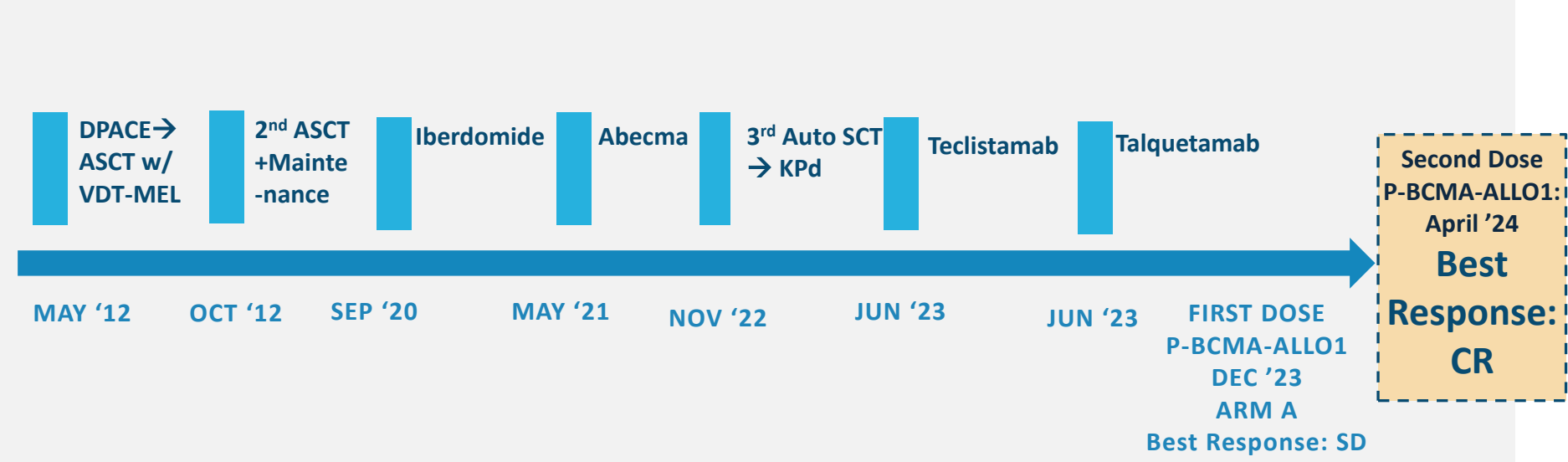
**Resolution of R pleural disease, Ongoing PR at M3**



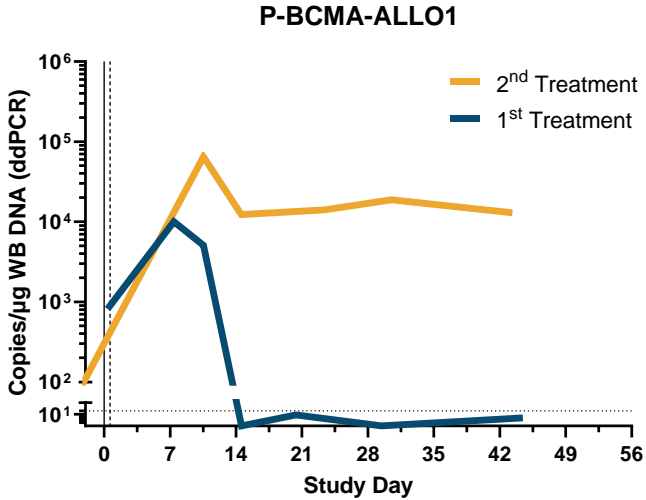
# Patient Case #3: Complete response observed in heavily pretreated patient (20 prior lines of therapy), who was also one of a few retreated patients

Patient demographics		
Age	Sex	Race
73	Female	White

Disease characteristics	
Myeloma subtype	<b>Kappa Light Chain</b>
High Risk (Y/N)	<b>Yes</b>
Years since diagnosis	<b>12.2</b>
Prior lines anti-myeloma therapy	<b>20</b>
Prior BCMA (Y/N)	<b>Yes</b>



## Cellular Kinetics



# P-BCMA-ALLO1 Phase 1 interim data summary

## 100% (n=72) of ITT population treated with “off the-shelf” investigational allogeneic CAR-T without waiting

- Allogeneic CAR-T infusion one week after enrollment in study
- No invasive apheresis, no bridging therapy, and included patients treated in outpatient setting

## Compelling interim safety results observed in a diverse, heavily pretreated, refractory and high-risk patient population

- Overall consistent safety results observed across all arms, without use of steroid or tocilizumab prophylaxis
- No DLTs, GvHD, HLH/MAS, Parkinsonism or cranial neuropathies observed
- Low CRS, ICANS (all grade 1 or 2) and infection rates, with rapid cytopenia recovery

## Exceptional clinical activity observed in optimized lymphodepletion arm C, including both BCMA-experienced and BCMA-naïve patients

- Arm C (largest but least mature cohort, n=23): 91% ORR, including 100% ORR in BCMA-naïve patients and 86% ORR in prior BCMA/GPRC5D auto CAR-T and/or TCE-exposed patients
- Arms A & B (smaller, but somewhat more mature arms): 42% and 70% ORR, respectively, with a mDOR (pooled) estimated at 5-10 months for patients with ≥6 months follow up
- Median time to response of only 16 days, for total median treatment decision-to-response time of ~3.5 weeks

## Study is ongoing, currently enrolling patients in Phase 1b expansion, with Arm C LD (NCT04960579)

- P-BCMA-ALLO1 has been recognized by the FDA with RMAT and ODD designations

# Agenda

Topic	Presenter	Time
Introduction	<b>Kristin Yarema, Ph.D.</b> Chief Executive Officer, Poseida Therapeutics	5 Minutes
<b>A Phase 1 Study of P-BCMA-ALLO1, a Non-viral, Allogeneic BCMA Directed CAR-T in Relapsed/Refractory Multiple Myeloma (RRMM)</b>	<b>Bhagirathbhai Dholaria, M.D.</b> Associate Professor of Medicine Malignant Hematology & Stem Cell Transplantation Vanderbilt University Medical Center, Nashville, TN, USA	10 Minutes
<b>Fireside Chat/Panel Discussion</b>	<i>Panelists:</i> <b>Bhagirathbhai Dholaria, M.D.</b>  <b>Tom Martin, M.D.</b> Clinical Professor of Medicine, Adult Leukemia and Bone Marrow Transplantation Program and Director of Hematology, Blood and Marrow Transplantation and Cellular Therapy at UCSF, and Co-leader of the Cancer Immunology & Immunotherapy Program at the UCSF Helen Diller Family Comprehensive Cancer Center  <i>Moderator:</i> <b>Syed Rizvi, M.D.</b> Chief Medical Officer, Poseida Therapeutics	30 Minutes
<b>Concluding Remarks</b>	<b>Kristin Yarema, Ph.D.</b> Chief Executive Officer, Poseida Therapeutics	15 Minutes

# Fireside Chat

## Moderator



**Syed Rizvi, M.D.**  
*Chief Medical Officer*



**Bhagirathbhai  
Dholaria, M.D.**

Associate Professor of Medicine  
Malignant Hematology & Stem Cell  
Transplantation  
Vanderbilt University Medical Center,  
Nashville, TN, USA



**Thomas G.  
Martin, M.D.**

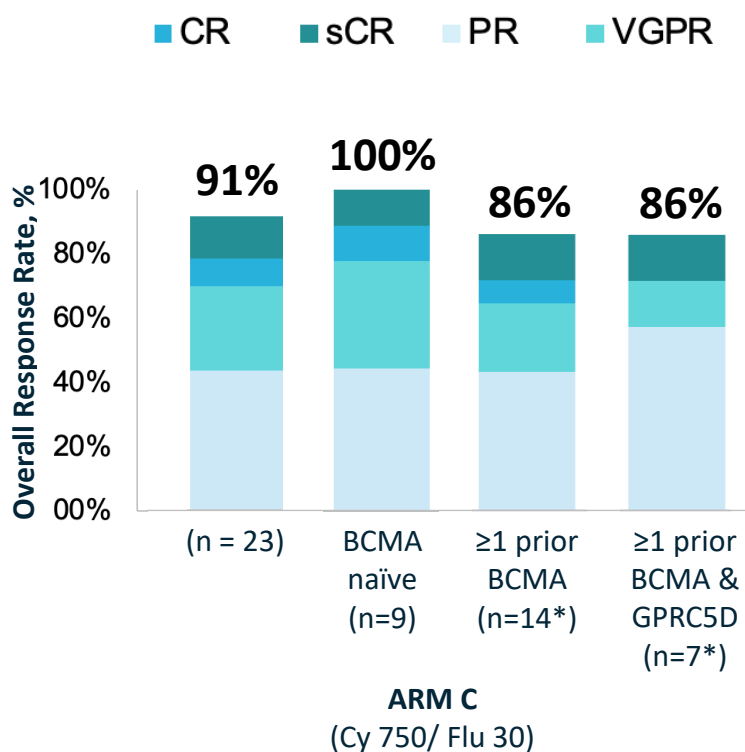
Clinical Professor of Medicine, Adult  
Leukemia and Bone Marrow Transplantation  
Program and Director of Hematology, Blood  
and Marrow Transplantation and Cellular  
Therapy at UCSF  
Co-leader of the Cancer Immunology &  
Immunotherapy Program at the UCSF Helen  
Diller Family Comprehensive Cancer Center

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# IMS 2024: P-BCMA-ALLO1 demonstrated compelling early efficacy and safety results in tough to treat patients while also providing superior patient treatment experience

## High efficacy (ORR) in BCMA-naive and BCMA-experienced patients<sup>1</sup>



\*\*talquetamab, a GPRC5D bispecific T cell engager

\* Includes 1 retreatment subject

## Compelling Emerging Safety Results<sup>2</sup>

- Differentiated vs. auto CAR-T and bispecific/ TCEs
- **No** GvHD, DLTs, Parkinson's-like symptoms observed
- Low CRS, neurotox rates all Gr ≤2
- Majority of AEs were Grade 1/2
- Consistent profile across all arms
- Fully non-viral approach and available (though unused) safety switch

## Superior Patient Experience

- 100% of ITT population underwent LD and received P-BCMA-ALLO1
- Outpatient optionality
- Treatment of all patients with in-spec product
- **No** waiting...
  - **No** invasive patient apheresis
  - **No** anti-myeloma bridging therapy
- Available on-demand from manufactured inventory



# P-BCMA-ALLO1 Phase 1: A more difficult to treat patient population...

	KarMMa <sup>4</sup>	Cartitude-1 <sup>6</sup>	MajesTEC-1 <sup>7</sup>	P-BCMA-ALLO1 all patients <sup>1</sup>	P-BCMA-ALLO1 arm C <sup>1</sup>
	N=128	N=97	N=165	N=72	N=21
<b>Age group ≥ 65, # (%)</b>	45 (35%)	35 (36%)	24 (15%) (age ≥ 75)	<b>43 (60%)</b>	<b>10 (48%)</b>
<b>Minority patient representation</b>	NA	20 (21%)	31 (19%)	<b>24 (33%)</b>	<b>8 (38%)</b>
<b>ECOG 0</b>	57 (45%)	39 (40%)	55 (33%)	<b>12 (29%)</b>	<b>8 (38%)</b>
<b>High risk cytogenetics, # (%)*</b>	45 (35%)	23 (24%)	38** (26%)	<b>50 (69%)</b>	<b>13 (62%)</b>
<b>EMD, # (%)</b>	50 (39%) {incl. bone-based lesions}	13 (13%)	8 (20%)	<b>19 (26%)</b>	<b>8 (38%)</b>
<b>Previous ASCT</b>	120 (94%)	87 (90%)	135 (81%)	<b>42 (58%)</b>	<b>14 (67%)</b>
<b>1 prior anti-BCMA/GPRC5D</b>	0	0	0	<b>31 (43%)</b>	<b>13 (62%)</b>
<b>Multiple prior BCMA/GPRC5D</b>	0	0	0	<b>15 (21%)</b>	<b>8 (38%)</b>
<b>Bridging Therapy, # (%)</b>	112 (88%)	73 (75%)	NA	<b>0 (0%)</b>	<b>0 (0%)</b>

**P-BCMA-ALLO1 Arm C is among one of the most heavily pre-treated myeloma patient populations ever studied**

**Substantially older patient population**

**More racially diverse population, including Black Americans and other minorities**

**Lower number of high-performance status (ECOG 0) patients**

**Patients up to 85 yrs old treated**

**Routine pre-treatment AE prophylaxis included only acetaminophen and diphenhydramine**

\*Defined as the presence of Del 17p,t(14;16), t(4;14); Anito-cel high-risk cytogenetics including +1q gain is n = 26 (68%); No head-to-head trial has been conducted evaluating P-BCMA-ALLO1 against other products included herein. Cross-trial data interpretation should be considered with caution as it is limited by differences in study population, study design, and other factors; \*\*Reported as 38/148 patients

<sup>1</sup>interim data as of September 6, 2024, <sup>4</sup>Munshi et al.; <sup>6</sup>Berdeja et al.; <sup>7</sup>Martin et al. (2023).

# P-BCMA-ALLO1 Phase 1: A higher risk patient population...

	KarMMa <sup>4</sup>	Cartitude-1 <sup>6</sup>	MajesTEC-1 <sup>7</sup>	P-BCMA-ALLO1 all patients	P-BCMA-ALLO1 arm C <sup>1</sup>
	N=128	N=97	N=165	N=72	N=21
Age group ≥ 65, # (%)	45 (35%)	35 (36%)	24 (15%) (age ≥ 75)	<b>43 (60%)</b>	<b>10 (48%)</b>
Minority patient representation	NA	20 (21%)	31 (19%)	<b>24 (33%)</b>	<b>8 (38%)</b>
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Multiple prior BCMA/GPRC5D	0	0	0	<b>15 (21%)</b>	<b>8 (38%)</b>
Bridging Therapy, # (%)	112 (88%)	73 (75%)	NA	<b>0 (0%)</b>	<b>0 (0%)</b>

**P-BCMA-ALLO1 Arm C is among one of the most heavily pre-treated myeloma patient populations ever studied**

Almost **70% of patients overall** and more than 60% in Arm C had **one or more high-risk genetic abnormalities**, which correlates with poor prognosis

High rates of **extramedullary disease** and extensive myeloma burden in some patients

**Fewer patients receiving ASCT** may reflect greater frailty among patient population as well as changing treatment paradigms

\*Defined as the presence of Del 17p,t(14;16), t(4;14); Anito-cel high-risk cytogenetics including +1q gain is n = 26 (68%); No head-to-head trial has been conducted evaluating P-BCMA-ALLO1 against other products included herein. Cross-trial data interpretation should be considered with caution as it is limited by differences in study population, study design, and other factors; \*\*Reported as 38/148 patients

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# P-BCMA-ALLO1 Phase 1: ...and a more refractory patient population

	KarMMa <sup>4</sup>	Cartitude-1 <sup>6</sup>	MajesTEC-1 <sup>7</sup>	P-BCMA-ALLO1 all patients	P-BCMA-ALLO1 arm C <sup>1</sup>
	N=128	N=97	N=165	N=72	N=21
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<b>Bridging Therapy, # (%)</b>	112 (88%)	73 (75%)	NA	<b>0 (0%)</b>	<b>0 (0%)</b>

**P-BCMA-ALLO1 Arm C is among one of the most heavily pre-treated myeloma patient populations ever studied**

**62% of Arm C patients received at least one BCMA-targeting therapy previously**

**Nearly 30% of patients had failed both a BCMA CAR-T and a BCMA bispecific T-cell engager previously**

**And another nearly 30% of patients had failed BCMA therapy and GPRC5D TCE**

**No patient received bridging anti-myeloma drug therapy or IL-6/steroid AE prophylaxis**

\*Defined as the presence of Del 17p,t(14;16), t(4;14); Anito-cel high-risk cytogenetics including +1q gain is n = 26 (68%); No head-to-head trial has been conducted evaluating P-BCMA-ALLO1 against other products included herein. Cross-trial data interpretation should be considered with caution as it is limited by differences in study population, study design, and other factors; \*\*Reported as 38/148 patients

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# P-BCMA-ALLO1 interim efficacy results are competitive with other BCMA therapies\*

**Comparable-to-superior ORR when indirectly compared with other therapies on an intent-to-treat (ITT) basis—while at the same time in a more refractory patient population**

Late-line MM Patients	ABECMA (received CAR-T) <sup>1</sup>	ABECMA (ITT)	CARVYKTI (received CAR-T) <sup>2</sup>	CARVYKTI (ITT)	TECVAYLI (ITT) <sup>3</sup>	P-BCMA-ALLO1 (ARM C)
Patients	N=100	N=135	N=97	N=113	N=110	N=23
<b>ORR</b>	72%	<b>53%</b>	98%	<b>84%</b>	<b>62%</b>	<b>91%</b>
sCR + CR	28%	21%	80%	69%	28%	22%**
<b>VGPR+</b>	53%	<b>39%</b>	94%	<b>81%</b>	<b>57%</b>	<b>48%**</b>

- **ABECMA, CARVYKTI, TECVAYLI data is in 100% BCMA-naïve patients compared to 62% receiving prior anti-BCMA autologous CAR-T or bispecific and/or GPRC5D in P-BCMA-ALLO1 Arm C.**
- **P-BCMA-ALLO1 retreatment potential also being explored**

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\*\*Data Maturing

## P-BCMA-ALLO1 has shown differentiated safety results\*

Late-line MM Patients	ABECMA <sup>1</sup>	CARVYKTI <sup>2</sup>	TECVAYLI <sup>3</sup>	P-BCMA-ALLO1 (All treated)	P-BCMA-ALLO1 (Arm C)
CRS, All Grade	84%	95%	72%	<b>27%</b>	<b>39%</b>
Neurotoxicity, All Grade	18%	21%	15%	<b>6%</b>	<b>13%</b>
All infections	50%	58%	76%	<b>31%</b>	<b>43%</b>
Parkinsonism	Yes	Yes	No	<b>No</b>	<b>No</b>
Bridging therapy	Yes	Yes	No	<b>No</b>	<b>No</b>
Secondary primary malignancy (SPM) signal	Yes	Yes	No	<b>No</b>	<b>No</b>

**P-BCMA-ALLO1 demonstrated consistent safety profile in both BCMA-naïve & BCMA-experienced patients**  
*No DLTs, no grade ≥3 CRS or ICANS, no GvHD*  
*ABECMA, CARVYKTI and TECVAYLI enrolled BCMA-naïve patients only*

\*No head-to-head trial has been conducted evaluating P-BCMA-ALLO1 against other products included herein. Cross-trial data interpretation should be considered with caution as it is limited by differences in study population, study design, and other factors.

1. Munshi N.C. Idecabtagene Vicleucel in Relapsed and Refractory Multiple Myeloma. N Engl J Med. 2021;384:705-716. 2. Berdeja et al. (CARTITUDE-1): a phase 1b/2 open-label study. Lancet. 2021 Jul. 3. Moreau P. Teclistamab in Relapsed or Refractory Multiple Myeloma. N Engl J Med. 2022;387:495-505.

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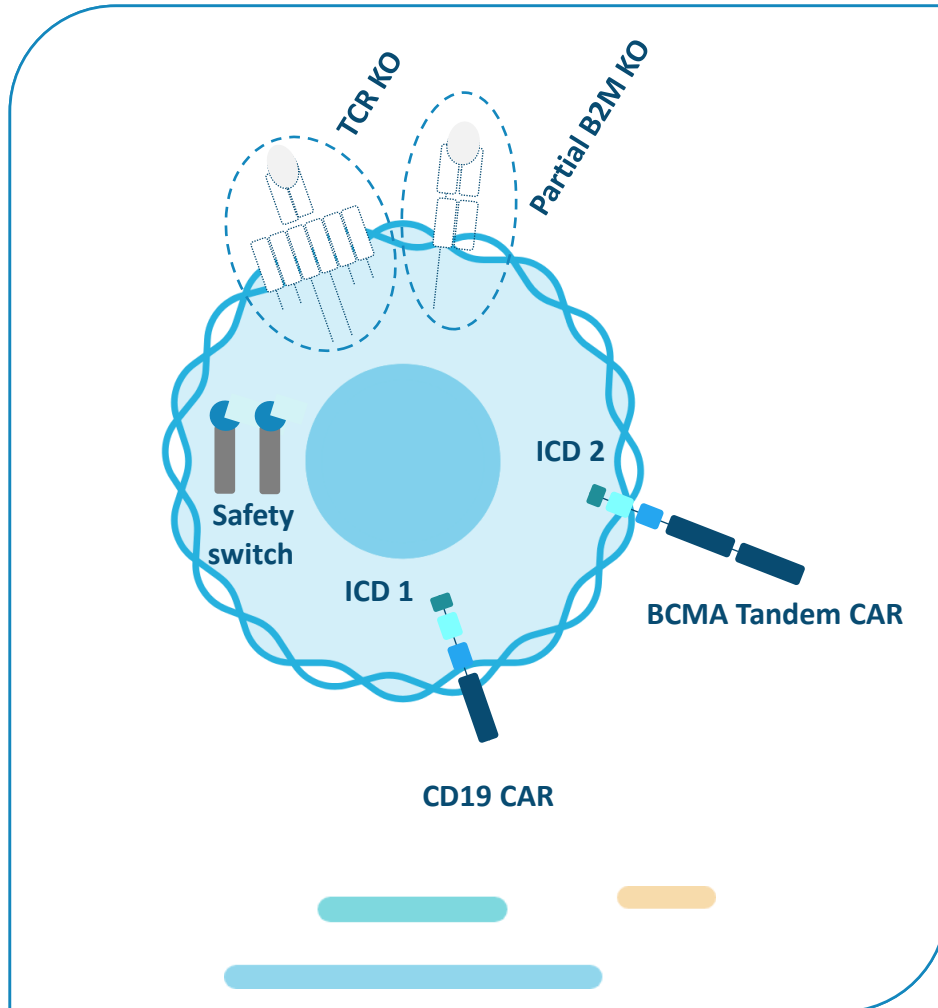
- P-BCMA-ALLO1 has been recognized by the FDA with RMAT and ODD designations

# Our robust pipeline spans allogeneic CAR-T and non-viral genetic medicines

INDICATION		PRECLINICAL	IND-ENABLING	PHASE 1	NEXT ANTICIPATED MILESTONE	
Allogeneic CAR-T	<b>Heme Malignancies and Autoimmune Diseases</b>					
	<b>P-BCMA-ALLO1</b>	Multiple myeloma				<b>3Q24:</b> IMS data update
	<b>P-CD19CD20-ALLO1</b>	B-cell malignancies				<b>4Q24:</b> Data update
	<b>P-BCMACD19-ALLO1</b>	Multiple myeloma and autoimmune diseases				<b>4Q24 – 1Q25:</b> Data update
	<b>P-CD70-ALLO1</b>	Acute myeloid leukemia			Option	
	<b>Solid Tumor*</b>					
	<b>P-MUC1C-ALLO1</b>	Breast, ovarian, colorectal, lung, pancreatic, renal				<b>4Q24:</b> Data update
	<b>P-PSMA-ALLO1</b>	Prostate cancer				
<i>Additional updates across allogeneic CAR-T portfolio and earlier pipeline</i>					<b>Nov. 14, 2024:</b> Cell Therapy R&D Day	
Genetic Medicines	<b>Liver Directed</b>					
	<b>P-KLKB1-101</b>	Hereditary Angioedema (HAE)				<b>4Q24:</b> Data update(s)
	<b>P-FVIII-101</b>	Hemophilia A				<b>2025:</b> One IND filing submission

\*Solid tumor targets identified in conjunction with the research collaboration and license agreement with Astellas are yet to be disclosed

# Next frontier of Allo CAR-T: Poseida's BCMA-CD19 Dual CAR-T



**Potential for potent cytotoxicity against BCMA and/or CD19, a key feature for both oncology and autoimmunity**

- Includes allogeneic platform and process improvements
  - 2 full length CARs, including a tandem BCMA binder
  - Optimized dual intracellular domains to enhance potency
- Proprietary Poseida core platform elements
  - T<sub>SCM</sub>-rich product, with TCR and partial B2M knockout
  - Safety switch, selectable marker

**Proof-of-concept exists for use of BCMA-CD19 dual autologous CAR-T in multiple myeloma, NHL, and autoimmune disease**

*IND-enabling studies underway*



# Proprietary clinically validated, non-viral platform positions Poseida for leadership in allogeneic cell therapy

Unique Non-Viral, T <sub>SCM</sub> -Rich CAR-T Platform	Potential Best-in-Class Allo CAR-T Profile in MM	Positioned for Clinical and Commercial Success	Compelling Earlier-Stage Pipeline and Growth Potential
<ul style="list-style-type: none"><li>✓ Only T<sub>SCM</sub>-based allo CAR-T approach</li><li>✓ Enabled by proprietary, nonviral technologies (transposon, cas-CLOVER, booster molecule)</li><li>✓ Liquid and solid tumors, plus autoimmune disease</li></ul>	<ul style="list-style-type: none"><li>✓ Positive interim Phase 1 results for lead asset, P-BCMA-ALLO1</li><li>✓ 91% ORR in optimized lymphodepletion arm</li><li>✓ Compelling differentiated early safety results</li><li>✓ Enrolling Phase 1b</li><li>✓ FDA RMAT designation</li></ul>	<ul style="list-style-type: none"><li>✓ Onsite, own GMP manufacturing facility</li><li>✓ Scalable, reproducible, cost-effective manufacturing approach to meet market demand</li><li>✓ Strong partnerships with Roche and Astellas</li><li>✓ Roche funding all late-stage development costs for partnered programs &amp; well positioned to commercialize therapies globally, including MM and lymphoma</li></ul>	<ul style="list-style-type: none"><li>✓ Several wholly owned next-gen therapies</li><li>✓ Promising fully non-viral delivery technology poised to unlock field of genetic medicines</li><li>✓ Strong/broad IP portfolio</li><li>✓ Additional partnering opportunities available</li></ul>



**Thank You**

**A New Class of Cell Therapies & Genetic Medicines with the Capacity to Cure**

