

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 8-K

**CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported):
November 14, 2024**

Poseida Therapeutics, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

001-39376
(Commission
File Number)

47-2846548
(I.R.S. Employer
Identification No.)

9390 Towne Centre Drive, Suite 200
San Diego, California
(Address of principal executive offices)

92121
(Zip Code)

Registrant's telephone number, including area code: (858) 779-3100

N/A
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.0001 per share	PSTX	Nasdaq Global Select Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 7.01 Regulation FD Disclosure.

On November 14, 2024, Poseida Therapeutics, Inc. (the “Company”) issued a press release announcing that members of its management are providing an update on the Company’s cell therapy research and development programs and making available a corporate presentation. A copy of the press release and the corporate presentation are attached as Exhibit 99.1 and Exhibit 99.2, respectively, to this report. The corporate presentation will also be available under the “Investors & Media” section of the Company’s website.

The information in this Item 7.01 of this report (including Exhibits 99.1 and 99.2) is furnished and shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or subject to the liabilities of that section or Sections 11 and 12(a)(2) of the Securities Act of 1933, as amended. The information shall not be deemed incorporated by reference into any other filing with the Securities and Exchange Commission made by the Company, whether made before or after today’s date, regardless of any general incorporation language in such filing, except as shall be expressly set forth by specific references in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1	Press Release, dated November 14, 2024
99.2	Corporate Presentation, dated November 14, 2024
104	Cover Page Interactive Data File

SIGNATURES

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

Poseida Therapeutics, Inc.

Date: November 14, 2024

By: /s/ Harry J. Leonhardt, Esq.
Name: Harry J. Leonhardt, Esq.
Title: General Counsel, Chief Compliance Officer & Corporate Secretary



Poseida Therapeutics Hosts Cell Therapy R&D Day Highlighting Its Innovative Clinical and Preclinical Pipeline

Emerging leadership in allogeneic CAR-T for hematologic malignancies demonstrated by recent P-BCMA-ALLO1 Phase 1 data and new preclinical findings for P-CD19CD20-ALLO1 and P-CD70-ALLO1

Latest preclinical data on P-BCMACD19-ALLO1 demonstrates its potential as a next-generation allogeneic T_{SCM}-rich CAR-T for both autoimmune diseases and oncology

Advancing innovative strategies to overcome the unique challenges of applying CAR-T to solid tumors

Virtual R&D Day featuring partner Astellas Pharma and Poseida's leadership and scientific teams to be held today at 10:00am ET / 7:00am PT

SAN DIEGO, November 14, 2024 — Poseida Therapeutics, Inc. (Nasdaq: PSTX), a clinical-stage allogeneic cell therapy and genetic medicines company advancing differentiated non-viral treatments for patients with cancer, autoimmune and rare diseases, today announced plans to share progress across its clinical- and earlier-stage pipeline of differentiated T stem cell memory cells (T_{SCM})-rich allogeneic CAR-T therapies in oncology and autoimmune diseases during a virtual R&D Day to be held today at 10:00am ET / 7:00am PT.

“We believe Poseida is well positioned to be a cell therapy leader based on the unique capabilities of our proprietary non-viral technology platform and our allogeneic T_{SCM}-rich CAR-T approach,” said Kristin Yarema, Ph.D., President and Chief Executive Officer of Poseida Therapeutics. “We are organizing our pipeline around three pillars – hematologic malignancies, solid tumors and autoimmune diseases – with multiple candidates in each that give us a wide range of opportunities. In the emerging field of cell therapy for autoimmune diseases, we are optimistic that our platform can build upon the early success seen with autologous CAR-T by offering an off-the-shelf option that would expand accessibility and address the potential drivers of relapse with more complete B cell depletion.”

“Building on the advantages of our non-viral allogeneic T_{SCM}-rich approach, we are implementing several advanced technologies aimed at bringing the benefits of CAR-T therapy to patients with solid tumors,” said Devon J. Shedlock, Ph.D., Chief Scientific Officer, Cell Therapy at Poseida Therapeutics. “This includes our collaboration with Astellas, which brings together the unique technologies from both companies to create a new class of CAR-T, *convertibleCARs*[®], which employs multi-antigen targeting and other enhancements to improve CAR-T potency and persistence.”

The event will feature presentations by members of Poseida’s management team and will include a fireside chat with Peter Sandor, M.D., EVP and Head of Corporate Strategy at Astellas Pharma, that will cover the [research collaboration and license agreement](#) between Xyphos Biosciences, Inc., (a wholly owned subsidiary of Astellas, “Xyphos”) and Poseida to develop novel *convertibleCAR*[®] programs by combining the innovative cell therapy platforms from each of the companies. Poseida management will participate in a Q&A session at the end of the program.

Cell therapy technology platform: Poseida has built a full set of non-viral capabilities to design and develop allogeneic, T_{SCM}-rich CAR-T therapies. T_{SCM} cells are considered ideal for CAR-T therapy because they are long-lived, multi-potent and self-replicating, with the potential for an improved safety and efficacy profile. This compares to other approaches, which either use a different cell type or drive T cell differentiation (and therefore less stemness) as part of the process to manufacture the CAR-T cells. The key elements of Poseida's approach include:

- **Non-viral, transposon-based gene insertion system** preferentially integrates genes into naïve and T_{SCM} cells, with a high cargo capacity that allows for adding multiple genes to enhance functionality and add safety features
- **Cas-CLOVER gene editing system** preserves the T_{SCM} cell type and operates effectively in resting T cells. It offers approximately 25-times greater fidelity than CRISPR-Cas9, supporting improved safety and quality
- **Wholly-owned, onsite GMP manufacturing facility** positioned to serve discovery through commercial needs across the Company's pipeline. The Company's Booster Molecule has enabled a scalable, lower cost manufacturing approach with the proven ability to generate cell yield up to over 100 doses per batch

Emerging leadership in allogeneic CAR-T for hematologic malignancies: Poseida will provide an overview of recently reported interim Phase 1 results for P-BCMA-ALLO1, its lead CAR-T program targeting BCMA for the treatment of multiple myeloma. New preclinical data suggest that P-BCMA-ALLO1 effectively targets mutations that are known to arise in patients with relapse after prior anti-BCMA therapies. P-BCMA-ALLO1 is part of Poseida's collaboration with Roche and is currently enrolling a Phase 1b dose expansion study, which will be outlined in the presentation. In addition, the Company will highlight its emerging pipeline programs for hematologic malignancies:

- **P-CD19CD20-ALLO1** is the Company's first dual CAR-T program targeting CD19 and CD20 for the treatment of B-cell malignancies in collaboration with Roche. New preclinical data demonstrate that P-CD19CD20-ALLO1 delivers high in vitro potency and strong in vivo antitumor activity for either CD19 or CD20 single-positive target cells, as well as double-positive targets. A Phase 1 clinical trial is enrolling patients with selected B-cell malignancies, with initial clinical data anticipated in 2025. Additional information about the trial is available at www.clinicaltrials.gov using identifier: NCT06014762.
 - Beyond hematologic malignancies, preclinical data also demonstrate robust in vitro activity against patient-derived B cells across multiple autoimmune diseases
- **P-CD70-ALLO1** is a preclinical program targeting CD70 for the treatment of diseases including acute myeloid leukemia (AML). New preclinical data demonstrate P-CD70-ALLO1's robust anti-AML effect, with no toxicity to hematopoietic stem cells. In addition, there is a growing body of clinical and preclinical evidence that targeting CD70 with cell therapy may be an effective treatment for solid tumors. Roche has an option to add this as a potential new program to the collaboration

Expanding allogeneic T_{SCM}-rich CAR-T to autoimmune disease: Poseida's cell therapy technology platform has the potential to create CAR-T therapies designed to address the challenges with existing emerging approaches to applying cell therapy to autoimmune disease, including autologous CAR-T, in vivo CAR-T and T cell engagers. The Company's lead program for autoimmune disease is P-BCMACD19-ALLO1, a dual CAR-T targeting BCMA and CD19. New preclinical data demonstrate P-BCMACD19-ALLO1's potential in both autoimmune disease and oncology:

- Demonstrated robust in vitro killing of patient-derived B cells across multiple autoimmune diseases, including rheumatoid arthritis (RA), systemic lupus erythematosus (SLE) and multiple sclerosis (MS), which collectively affect more than 5 million people in the U.S.

- Achieved dose-dependent depletion of primary human B cells in a humanized mouse model generated with human CD34+ cells
- Effectively eliminated primary human CD81+CD19+ multiple myeloma progenitor cells from patient bone marrow samples, addressing cells associated with relapse where BCMA-only targeted therapies were ineffective
- Demonstrated ability of P-BCMACD19-ALLO1 and P-BCMA-ALLO1 to kill tumor cells expressing known mutant forms of BCMA, which are linked to relapse in patients treated with autologous CAR-T and bispecific T cell engager therapies directed at BCMA

Poseida is conducting IND-enabling studies for P-BCMACD19-ALLO1 and plans to file one or more INDs for an autoimmune disease indication with the U.S. Food and Drug Administration.

Addressing historical barriers for CAR-T in solid tumors through a broad array of bold, innovative technologies enabled by the Company's

platform: There are currently no CAR-T therapies approved for solid tumors, with several key factors believed to be roadblocks: 1) antigen heterogeneity; 2) differing lymphodepletion needs compared to hematologic malignancies to enable CAR-T cell engraftment, tracking, and infiltration; 3) on-target off-tumor toxicity; and 4) hostile tumor microenvironment. Poseida is approaching these challenges with a suite of technologies across multiple solid tumor programs:

- **P-MUC1C-ALLO1** is Poseida's lead solid tumor CAR-T program targeting MUC1-C, a membrane protein overexpressed in many epithelial cancers. A Phase 1 clinical trial is enrolling patients with treatment-resistant breast, ovarian, colorectal and other solid tumors, with ongoing exploration of P-MUC1C-ALLO1 dosing and lymphodepletion regimens. A clinical data update is planned for the European Society for Medical Oncology Immuno-Oncology Congress 2024 (ESMO-IO) taking place in Geneva December 11-13, 2024. A patient case study from the Phase 1 trial demonstrated a 42% decrease in paraesophageal lymph node size with prolonged stable disease for nearly a year in a heavily pretreated appendiceal carcinoma patient. New preclinical data suggest adding low-dose methotrexate to standard lymphodepletion may enhance CAR-T expansion and persistence
- **P-PSMA-ALLO1** is a preclinical program targeting PSMA for prostate cancer. In preclinical models, P-PSMA-ALLO1's dual CAR format showed superior in vivo anti-tumor activity and cytotoxicity compared to single and tandem binder CAR-Ts
- Poseida and Xyphos are developing **allogeneic convertibleCARs® for solid tumors**, combining Poseida's allogeneic CAR-T_{SCM} platform with Xyphos' ACCEL™ technology to create controlled, long lasting, and highly active CAR-T therapies. New preclinical data shows positive results for an allogeneic *convertible*CAR-T_{SCM} targeting universal inert natural killer group 2 member D receptor (iNKG2D), paired with a solid tumor antigen-targeting MicAbody™. Poseida and Xyphos are working to optimize this *convertible*CAR® and MicAbody™ pairing, and other platform technologies designed to maximize potency and persistence
- Poseida will highlight its **allogeneic CAR-TCR-T cells** to address antigen heterogeneity in solid tumors. The Company recently presented new preclinical data demonstrating enhanced potency to better target solid tumors at the Society for Immunotherapy of Cancer (SITC) 39th Annual Meeting. Preclinical data highlight the potential of a combination of CAR-TCR-T cell treatment followed by a T cell engager (TCE). In this model, MUC1C-CAR and NY-ESO-1-TCR T cells effectively controlled a primary tumor (MUC1C+/NY-ESO-1+/CD70-), and later were reactivated and re-directed by a CD70 TCE to control challenge by a secondary tumor (MUC1C-/NY-ESO-1-/CD70+)

In-house manufacturing to support Poseida's broad cell therapy pipeline: the Company will highlight the capabilities of its GMP facility and team, including:

- New data demonstrated high-purity apheresis across different healthy donors, with consistency in CAR-T manufacturing (cellular expansion, gene editing, final phenotype) across collections from the same donor
- Future manufacturing platform enhancement opportunities including AI-assisted donor screening to improve efficiency; improving electroporation unit operations to improve gene editing efficiency and subsequent cell health; and leveraging dynamic bioreactor environments to increase yields

Video Webcast and Replay

This virtual event and access to the live webcast is available through the following registration link: <https://wsw.com/webcast/cc/pstx7/1467684>.

Registration for this virtual event and access to a replay of the live webcast will be available on the Investors & Media section of www.poseida.com. A replay of the webcast will be available for approximately 90 days following the presentation.

About Poseida Therapeutics, Inc.

Poseida Therapeutics is a clinical-stage biopharmaceutical company advancing differentiated allogeneic cell therapies and genetic medicines with the capacity to cure. The Company's pipeline includes investigational allogeneic CAR-T cell therapies for hematologic cancers, autoimmune diseases, and solid tumors, as well as investigational in vivo genetic medicines that address patient populations with high unmet medical need. The Company's approach is based on its proprietary genetic editing platforms, including its non-viral transposon-based DNA delivery system, Cas-CLOVER™ Site-Specific Gene Editing System, Booster Molecule and nanoparticle gene delivery technologies, as well as in-house GMP cell therapy manufacturing. The Company has formed strategic collaborations with Roche and Astellas to unlock the promise of cell therapies for cancer patients. Learn more at www.poseida.com and connect with Poseida on [X](#) and [LinkedIn](#).

Forward-Looking Statements

Statements contained in this press release regarding matters that are not historical facts are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include statements regarding, among other things, expected plans with respect to clinical trials, including timing of clinical data updates; anticipated timelines and milestones with respect to the Company's development programs and manufacturing activities and capabilities; the potential capabilities and benefits of the Company's technology platforms and product candidates, including the efficacy and safety profile of such product candidates; the quotes from Drs. Yarema and Shedlock; and the Company's plans and strategy with respect to developing its technologies and product candidates. Because such statements are subject to risks and uncertainties, actual results may differ materially from those expressed or implied by such forward-looking statements. These forward-looking statements are based upon the Company's current expectations and involve assumptions that may never materialize or may prove to be incorrect. Actual results could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, which include, without limitation, 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; the Company's reliance on third parties for various aspects of its business; risks and uncertainties associated with development and regulatory approval of novel product candidates in the biopharmaceutical industry; the Company's ability to retain key scientific or management personnel; the Company's ongoing and planned clinical trials; risks and uncertainties associated with conducting clinical trials; competition in the Company's target markets; whether any of the Company's product candidates will be shown to be effective or safe; the Company's ability to finance continued operations; the fact that the Company will have limited control over the efforts and resources that its collaborators devote to advancing development programs under their respective collaboration agreements; the fact that the Company may not receive the potential fees, reimbursements and payments under the collaboration agreements; the ability of the Company's collaborators to early terminate the collaboration, such that the Company may not fully realize the benefits of the collaborations; and the other risks and uncertainties described in the Company's filings with the Securities and Exchange Commission. All forward-looking statements contained in this press release speak only as of the date on which they were made. The Company undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made, except as required by law.

###

Poseida Investor and Media Relations:

Alex Chapman
Senior Vice President, IR & Corporate Communications
IR@poseida.com

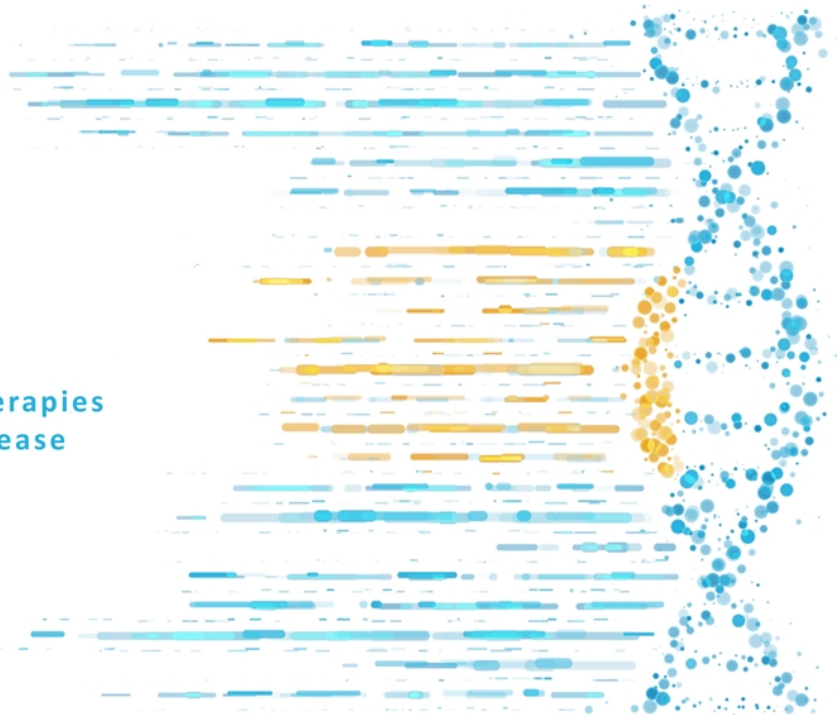
Sarah Thailing
Senior Director, IR & Corporate Communications
PR@poseida.com



Cell Therapy R&D Day

**Differentiated Allogeneic Cell Therapies
in Oncology and Autoimmune Disease**

NOVEMBER 14, 2024



Disclaimer

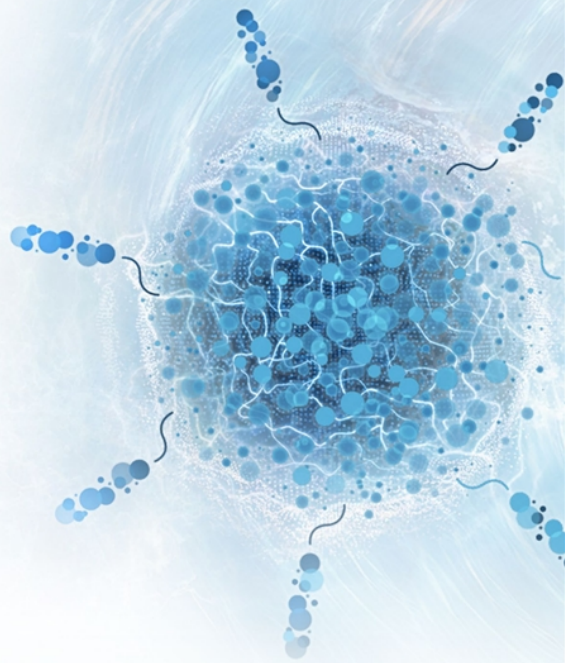
This presentation and any accompanying oral commentary contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts and include, without limitation, statements related 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, tolerability and safety profile of such product candidates; the quotes from Drs. Dholaria and Martin; 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 and research and development activities under our collaboration agreements; and future results of anticipated development efforts. 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; the fact that our collaboration agreements may be terminated early such that we may not fully realize the benefits of such collaborations; the fact that we will have limited control over the efforts and resources our collaborators devote to advancing development programs under our collaboration agreements and we may not receive the potential fees, reimbursements and payments under our collaboration agreements; risks and uncertainties associated with conducting clinical trials; whether any of our product candidates will be shown to be safe and effective; 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; risks and uncertainties associated with development and regulatory approval of novel product candidates in the biopharmaceutical industry; and other risks and uncertainties described in our filings with the Securities and Exchange Commission, 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.



Introduction: Poseida poised to lead in allogeneic cell therapy

Kristin Yarema, PhD

President & CEO



Introduction: Poseida poised to lead in allogeneic cell therapy

Kristin Yarema, PhD

Heme malignancies: P-BCMA-ALLO1 leads a portfolio of allogeneic T_{SCM}-rich CAR-T programs

Syed Rizvi, MD

From hematology to autoimmune disease: Poseida's BCMA-CD19 dual CAR-T

Kurinji Pandiyan, PhD

Waves of innovation in solid tumor cell therapy

Devon J. Shedlock, PhD

The power of partnerships fireside chat

Peter Sandor, MD (Astellas) & Karen Basbaum

In-house GMP manufacturing capabilities

Loren Wagner

Concluding remarks

Kristin Yarema, PhD

Q&A

Executive and Scientific Leadership



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

ALLOGENEIC CAR-T

Enabling broad and rapid
patient access to
transformational CAR-T



GENETIC MEDICINES

Non-viral delivery for gene
insertion and gene editing
to meet patient needs



"Top 10 Public Gene Editing Company"

UNMATCHED PLATFORM

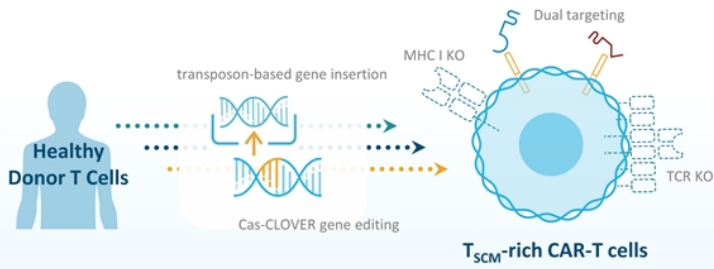
Innovating with powerful, proprietary, and differentiated genetic engineering technologies

Our unique system of non-viral tools can be used individually or together – with the capacity to treat cancer, autoimmune and rare diseases

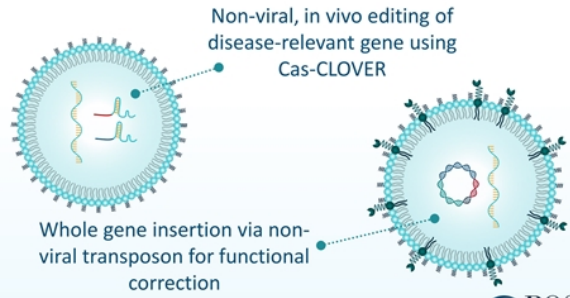
POSEIDA SYSTEM OF NON-VIRAL TOOLS



ALLOGENEIC CAR-T



NON-VIRAL GENETIC MEDICINES

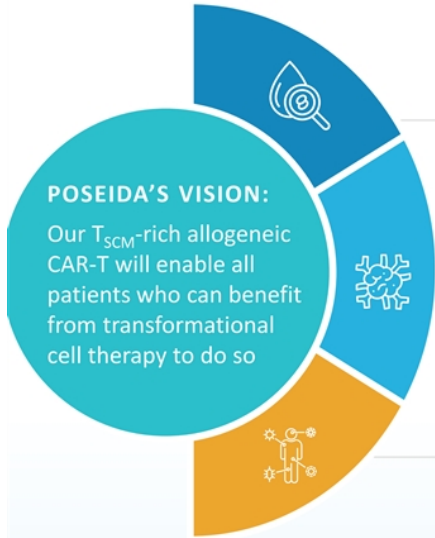


Poseida's robust platform underpins and enables work in three cell therapy areas

Areas of unmet need poised for disruption with the right allogeneic CAR-T platform



Opportunity



Hematology

Despite auto CAR-T approvals, access heavily restricted with safety issues further compounding need for novel safe & efficacious options

200K



New U.S. patients per year, representing ~10% of all new cancer incidences^{1,2}

Solid Tumor

Significant unmet need, historically elusive to CAR-T, requiring novel, innovative approaches for success

2M+



New U.S. patients per year^{1,2}

Autoimmune Disease

Exciting potential for CAR-Ts to deliver "immune reset" across a broad range of diseases, with the right allo platform crucial to unlock opportunity

5M+







U.S. patients living with **MS, RA, and Lupus**, which are increasing in prevalence^{3,4}

Note: size of circles not to scale

1. Cancer Facts & Figures 2024, American Cancer Society. 2. Cancer Statistics 2024, National Cancer Institute. 3. National MS Society, Arthritis.org, CDC. 4. Miller FW. Curr Opin Immunol. 2023 Feb;80:102266.

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

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

Our unique and proprietary toolkit has the capabilities required to produce T_{SCM}-rich allogeneic CAR-T, with potential to drive depth and durability of response

Fully Non-Viral Approach

Transposon



Non-viral gene insertion system 1

- ✓ **Preferentially insert into T_{SCM}**
High cargo capacity enhances functionality
Allows inclusion of multiple safety features + functionality

Cas-CLOVER



Gene editing system 2

- ✓ **Preserve T_{SCM} cell type**
Designed to address GVH & HVG alloreactivity
~25x greater fidelity vs. CRISPR-Cas9

Enabling Tech



Quality manufacturing at scale 3

- ✓ **Preserve T_{SCM} cell type**
High yield at low cost
Pure CAR-T cell product
Stored in inventory and ready for use

Poseida IP-protected tools designed to work together as a system

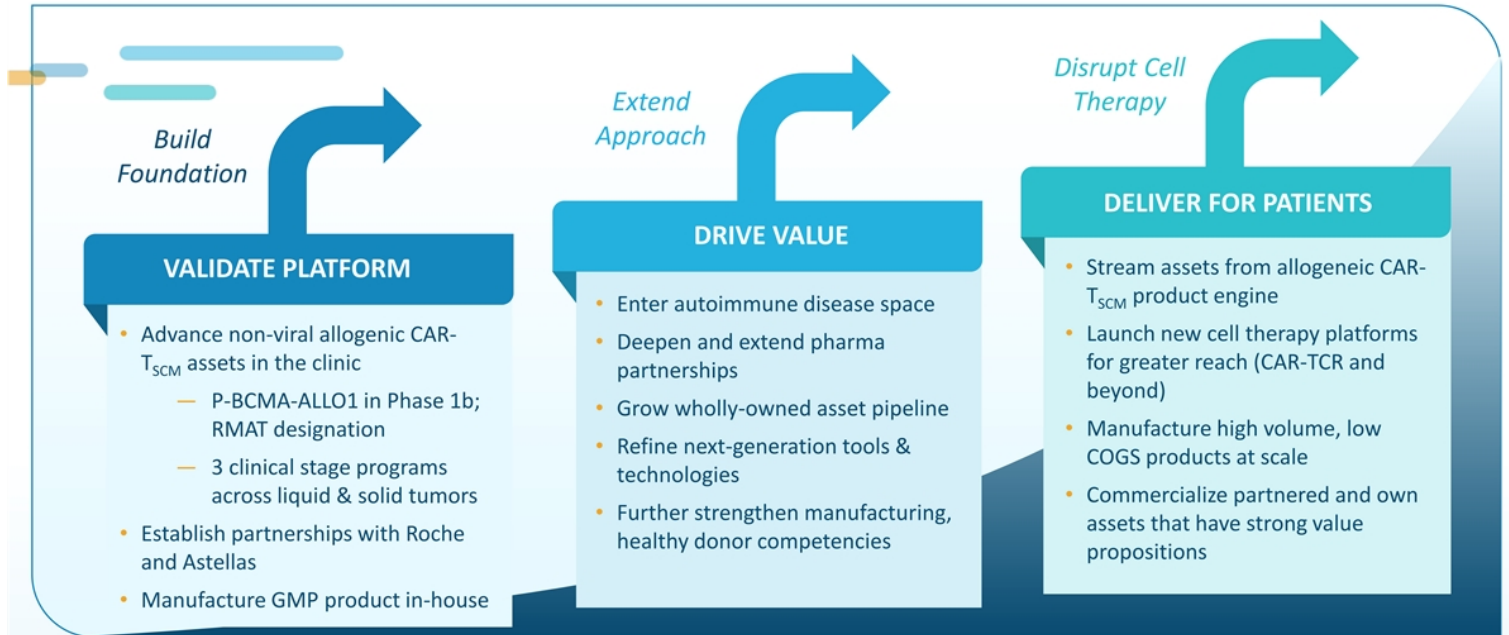
T_{SCM} correlates with depth and durability of response

Our rich pipeline includes partnered and wholly-owned allogeneic CAR-T as well as non-viral genetic medicines

	INDICATION	PRECLINICAL	IND-ENABLING	PHASE 1	PHASE 2	
Allogeneic CAR-T	Heme Malignancies and Autoimmune Diseases					
	P-BCMA-ALLO1	Multiple myeloma				
	P-CD19CD20-ALLO1	B-cell malignancies				
	P-BCMACD19-ALLO1	Multiple myeloma and autoimmune diseases				
	P-CD70-ALLO1	Acute myeloid leukemia				Option
	Novel Dual CAR	Heme malignancies, including multiple myeloma				
	Solid Tumor*					
	P-MUC1C-ALLO1	Breast, ovarian, colorectal, lung, pancreatic, renal				
P-PSMA-ALLO1	Prostate cancer					
ConvertibleCAR®	x2 Solid tumor programs*					
Genetic Medicines	Liver Directed					
	P-KLKB1-101	Hereditary Angioedema (HAE)				
	P-FVIII-101	Hemophilia A				

Poseida's path to value creation in allogeneic cell therapy

Presently heading into our second growth horizon

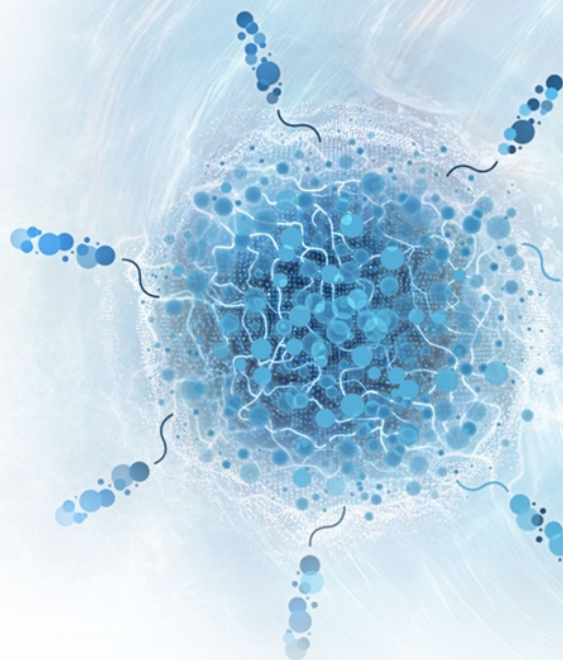




Heme malignancies: P-BCMA-ALLO1 leads a portfolio of allogeneic T_{SCM}-rich CAR-T programs

Syed Rizvi, MD

Chief Medical Officer





Bhagirathbhai Dholaria, M.D.

Associate Professor of Medicine
(Hematology/Oncology) at the Vanderbilt-Ingram
Cancer Center

“Right off the bat, I was very impressed with the rapid responses we saw in a couple of initial patients we treated, including several patients of my colleagues who had failed other standard therapies, including a significant amount of extramedullary disease. And within 4 to 6 weeks, the disease melted away with the clearance of bone marrow. The other thing I was very happy to see was the safety of this therapy compared to other CAR-T cell therapy, [where] we are seeing severe CRS and ICANS including prolonged cytopenia. The overall incidence of CRS was quite manageable, and severity was so low that now we are treating most of our patients on this trial on a complete outpatient basis.”



“I was very impressed with the overall response rate. The overall response rate in the patients who were BCMA naive was 100%, and the overall response rate in patients who were BCMA exposed was 86%.

And even in the seven patients who had exposure to BCMA and talquetamab or GPRC5D, the overall response rate was 86%. That's quite impressive in this, in fact, quite refractory patient population. And the duration of response was also quite impressive. So, between 5 and 10 months.”



Tom 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

P-BCMA-ALLO1 is a first-in-kind allogeneic CAR-T for multiple myeloma

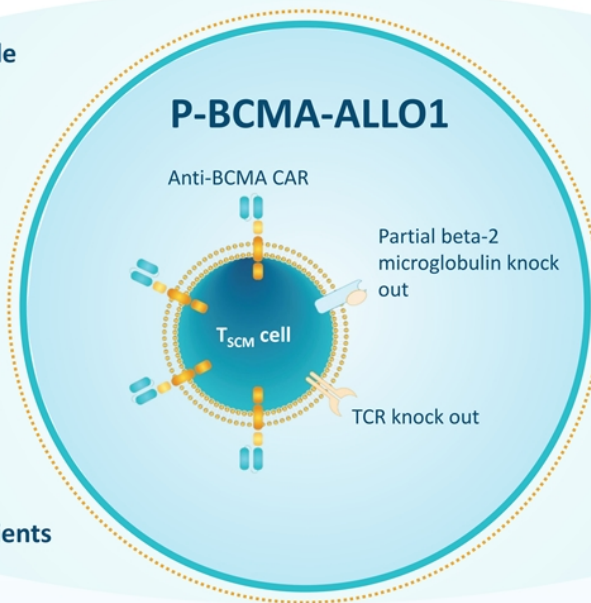


MM is a **common and incurable** blood cancer, with ~12,500 estimated U.S. deaths in 2024¹

~**179,000** people living with myeloma in the U.S., treated across multiple lines of therapy¹

Large market, ~**\$23B global, U.S. ~\$14B**, projected to grow at 9-10% annually²

Auto CAR-T deliver meaningful outcomes but **only ~10% of patients can benefit today²**



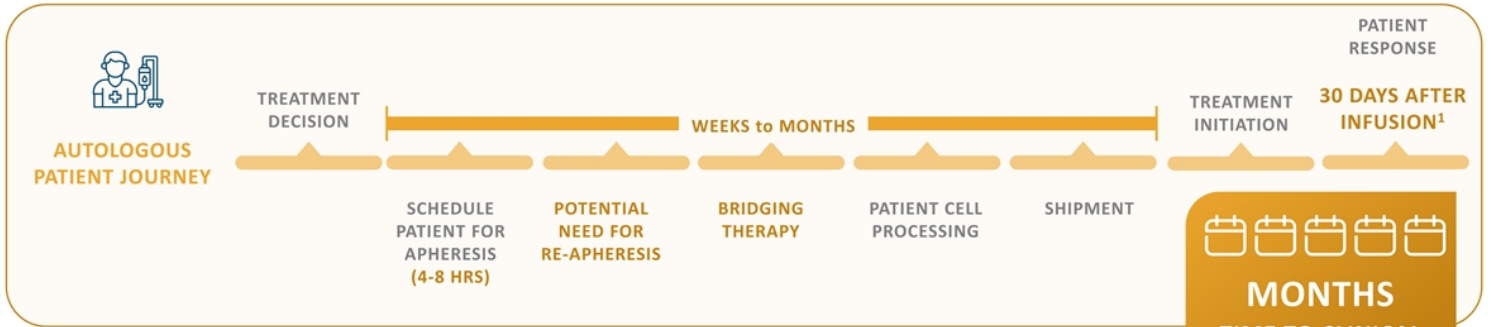
FDA Regenerative Medicine Advanced Therapy (RMAT) and Orphan Drug Designation (ODD)

Healthy donor-derived, non-viral, T_{SCM}-rich CAR-T with novel VH binder

Developed in collaboration with **Roche**; **Phase 1b** clinical trial underway

Manufactured by Poseida in La Jolla, CA

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



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 ≥ 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

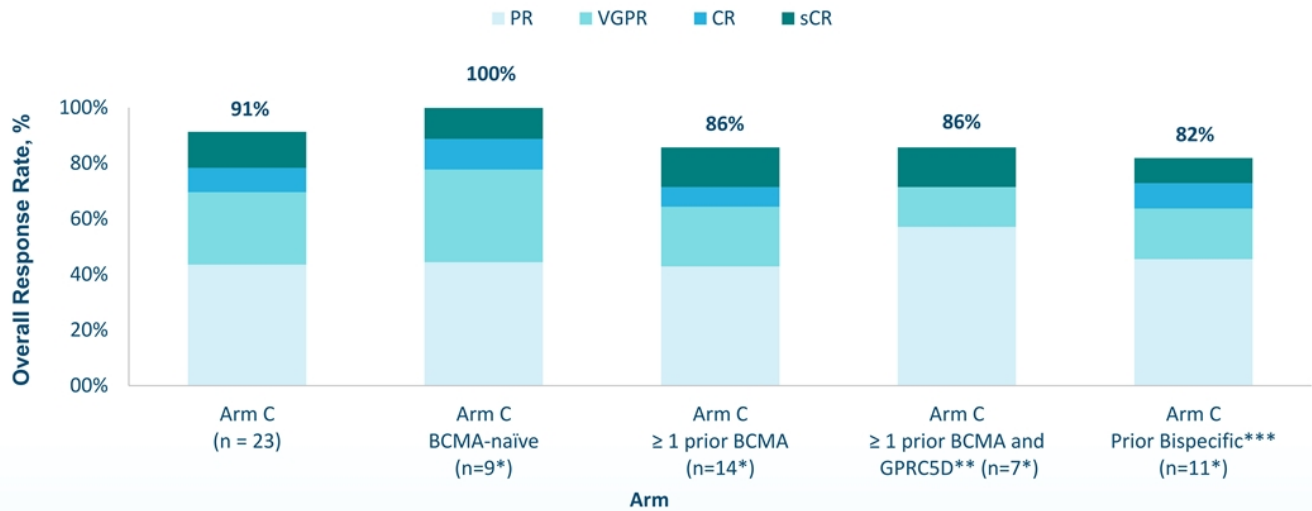
Arm/LD dose (mg/m ²)*	P-BCMA-ALLO1 Dose (cells/kg)	Total Patients [†]
Arm S (Cy 300/ Flu 30)	Range of 0.25-6 X 10 ⁶	N=25
Arm A (Cy 500/ Flu 30)	2 x 10 ⁶	N=19
Arm B (Cy 1000/ Flu 30)	2 x 10 ⁶	N=10
Arm C (Cy 750/ Flu 30)	2 x 10 ⁶	N=23

[†] 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; 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.

* Flu/Cy given $\times 3$ days. All patients in arms A, B and C dosed at P-BCMA-ALLO1 cell dose with range of 1.822 to 5.589 $\times 10^6$ cells/kg

Data cutoff for safety analysis was July 31st, 2024, and September 6th, 2024, for efficacy analysis.

P-BCMA-ALLO1 is highly clinically active in 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/m², flu 30mg/m². All dosed Cohort 2 = Range 2.0 to < 6.0 × 10⁶ cells/kg. Note: 2 Re-Treatment subjects included in arm C. *Includes 1 retreatment subject **talquetamab, a GPRC5D bispecific T cell engager *** Patients may have received another BCMA targeting agent in addition to bispecific PR, partial response; VGPR, very good partial response; CR, complete response; sCR, stringent complete response.

P-BCMA-ALLO1 Phase 1: A higher risk, difficult to treat and more refractory patient population*

	KarMMa ² Idecab	Cartitude-1 ³ Ciltacel	MajesTEC-1 ⁴ Tecilistamab	MonumentAL-1 ⁵ Talquetamab	MagnetisMM-3 ⁶ Elranatamab	P-BCMA-ALLO1 all patients ¹	P-BCMA-ALLO1 arm C ¹
	N=128	N=97	N=165	N=130 (subcut cohorts)	N=123	N=72	N=21
Age group ≥ 65, # (%)	45 (35%)	35 (36%)	24 (15%) (age ≥ 75)	37 (29%) (age ≥ 70)	80 (65%)	43 (60%)	10 (48%)
Minority patient representation	NA	20 (21%)	31 (19%)	23 (18%)	26 (21%)	24 (33%)	8 (38%)
ECOG 0	57 (45%)	39 (40%)	55 (33%)	--	45 (37%)	12 (29%)	8 (38%)
High risk cytogenetics, # (%)*	45 (35%)	23 (24%)	38** (26%)	18 *** (16%)	31 (25%)	50 (69%)	13 (62%)
EMD, # (%)	50 (39%) (incl. bone-based lesions)	13 (13%)	8 (20%)	--	39 (32%)	19 (26%)	8 (38%)
Previous ASCT	120 (94%)	87 (90%)	135 (81%)	111 (85%)	--	42 (58%)	14 (67%)
1 prior anti-BCMA/GPRC5D	0	0	0	42 (34%) (# of prior BCMA not specified)	0	31 (43%)	13 (62%)
Multiple prior BCMA/GPRC5D	0	0	0	--	0	15 (21%)	8 (38%)
Bridging Therapy, # (%)	112 (88%)	73 (75%)	NA	NA	NA	0 (0%)	0 (0%)

*Defined as the presence of Del 17p, t(14;16), t(4;14) for comparators; defined as t(4;14), t(14;16); p53 deletion; del17p; t(14;20); gain 1q for P-BCMA-ALLO1; 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

***reported as 18/112 patients.

¹ Interim data as of Jul 31st, 2024. ² Munshi et al.; ³ Berdeja et al.; ⁴ Martin et al. (2023). ⁵ Chari et al, 2022 ⁶ Lesokhin, et al. 2023

P-BCMA-ALLO1 early safety and efficacy results appear encouraging in comparison with marketed autologous CAR-T therapies*

Safety			
Late-line MM Patients	ABECMA ¹	CARVYKTI ²	P-BCMA-ALLO1 (Arm C)
Safety Pop	N=349	N=285	N=23***
CRS, All Grade	89%	84%	39%
ICANS, All Grade	40% <small>(all CAR-T Neurotox)</small>	13%	13%
All infections	61%	57%	47%
Parkinsonism	Yes	Yes	No
Bridging Tx	Yes	Yes	No
SPM signal	Yes	Yes	No

Efficacy			
Late-line MM Patients	ABECMA (ITT) ¹	CARVYKTI (ITT) ²	P-BCMA-ALLO1 (ARM C)
Efficacy Pop	N=135	N=113	N=23***
ORR	53%	84%	91%
sCR + CR	21%	69%	22%**
VGPR+	39%	81%	48%**

P-BCMA-ALLO1 had consistent and favorable safety profile in both BCMA-naïve & BCMA-experienced patients

No DLTs, no grade ≥3 CRS or ICANS, no GvHD, no parkinsonism

Quick cytopenia resolution and low serious infection rates

ABECMA, CARVYKTI and TECVAYLI enrolled BCMA-naïve patients only

1. Abecma [package insert]. Summit, NJ: Celgene Corporation; 2024; 2. Carvykti [package insert]. Horsham, PA: Janssen Biotech; 2024

*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. **Data Maturing *** Includes unconfirmed responses and 2 retreated subjects. Full safety database includes N=72 and results are consistent with Arm C.

SPM, secondary primary malignancy; DLT, dose limiting toxicities; CRS, cytokine release syndrome; ICANS, immune effector cell associated neurotoxicity syndrome; GvHD, graft versus host disease; ORR, overall response rate

P-BCMA-ALLO1 early safety and efficacy results appear encouraging in comparison with marketed **bispecific therapies***

Safety				
Late-line MM Patients	TALVEY ¹	TECVAYLI ²	ELFREXIO ³	P-BCMA-ALLO1 (Arm C)
Safety Pop	N=339	N=165	N=183	N=23***
CRS, All Grade	76%	72%	58%	39%
ICANS, All Grade	9% (N=265)	6%	3%	13%
All infections	53%	61%	42%	47%
SPM signal	-	-	-	No

Efficacy				
Late-line MM Patients	TALVEY (ITT) ¹	TECVAYLI (ITT) ²	ELREXFIO (ITT) ³	P-BCMA-ALLO1 (ARM C)
Efficacy Pop	N=87	N=110	N=97	N=23***
ORR	74%	62%	58%	91%
sCR + CR	33%	28%	26%	22%**
VGPR+	58%	57%	52%	48%**

Bispecifics are dosed weekly and in cycles after cycles, tethering the patient to the medical center affecting the quality of life of the patient; meanwhile CAR-T has “one and done” dosing approach.

1. Talvey [package insert]. Horsham, PA: Janssen Biotech, 2023; 2. Tecvayli [package insert]. Horsham, PA: Janssen Biotech; 2022. 3. Elrexfio [package insert]. New York, NY Pfizer Inc. 2023.

*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.

**Data Maturing

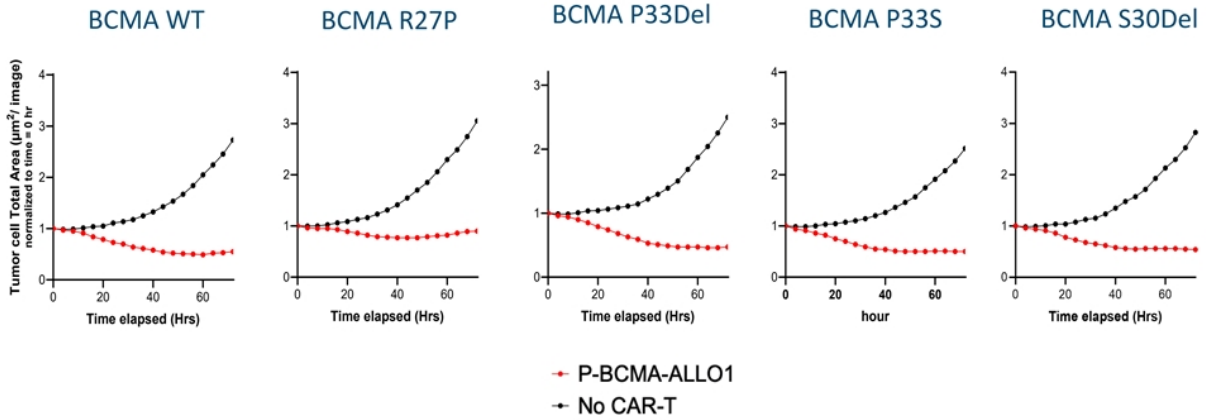
*** Includes unconfirmed responses and 2 retreated subjects.

Full safety database includes N=72 and results are consistent with Arm C.

P-BCMA-ALLO1 effectively targets mutations that are known to arise in patients with relapse after prior anti-BCMA therapies



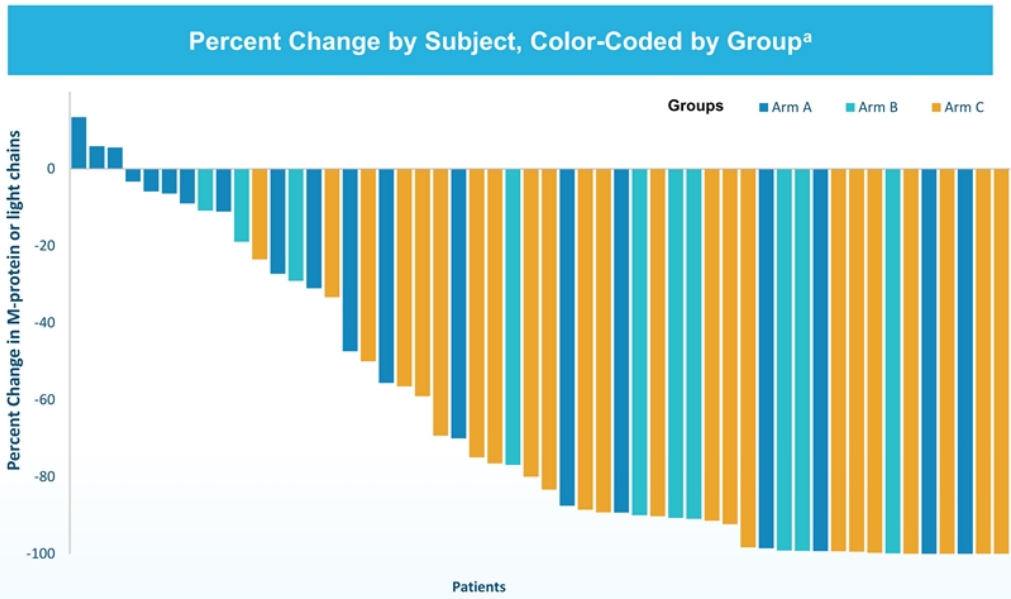
P-BCMA-ALLO1 kills tumor cells expressing wild type BCMA or clinically identified BCMA escape mutants



Poseida data on file

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

Median Time to Response (Pooled Arms A + B)	Median Duration of Response for Patients with ≥ 6 Months of Follow Up (Pooled Arms A + B)
16 Days (95% CI 15 - 22)	232 Days (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

^aThe % 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. MTTR: median time to response; mDOR: median duration of response; SPEP, serum protein electrophoresis; UPEP, urine protein electrophoresis; FLC, free light chain.

Summary: P-BCMA-ALLO1 demonstrates compelling early efficacy and safety results in heavily pretreated patients while delivering on the patient experience promise

High efficacy (ORR) in BCMA-naïve and BCMA-experienced patients¹

- **ORR in Arm C is 91%**
- **100% ORR in BCMA naïve patients**
- **Impressive efficacy seen in BCMA experienced patients, including 86% ORR in pts with ≥ 1 prior BCMA/ ≥ 1 prior BCMA + GPRC5D**
- **P-BCMA-ALLO1 is effective following prior bispecific therapy with an 82% ORR**

Compelling Emerging Safety Results²

- **Differentiated safety** vs. auto CAR-T and bispecific/T-cell engagers
- **No GvHD, DLTs, Parkinson's-like symptoms observed**
- **Low CRS, neurotoxicity** all Gr ≤ 2
- **Majority of AEs were Grade 1/2**
- **Fully non-viral approach** and available safety switch vs. autologous/virus SPM concerns

Superior Patient Experience

- **100% of enrolled patients treated** with in-spec product
- **Outpatient** optionality for ease and reimbursement
- **No waiting...available on-demand** from inventory
 - **No** invasive patient apheresis
 - **No** anti-myeloma bridging therapy
- **~3.5 weeks from patient enrollment to clinical response**

Phase 1b study schema, dose expansion is actively enrolling two dosing cohorts

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

Key Inclusion:

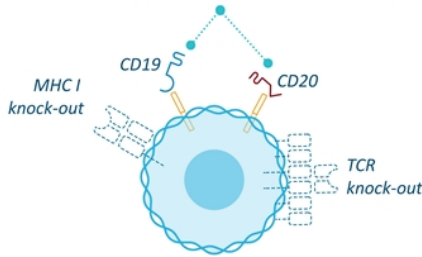
- Must have had ≥ 3 prior lines of therapy including a PI, IMiD & CD38 mAb or be triple refractory
- Documented measurable disease
- ECOG 0 or 1
- n=40

- **Primary Endpoints:** ORR based on IMWG criteria
- **Secondary Endpoints:** Safety, tolerability and efficacy of P-BCMA-ALLO1 (ORR, CR/sCR, TTR, DOR, PFS, OS)
- **Exploratory Endpoints:** MRD, cellular kinetics, BCMA expression in the bone marrow, soluble BCMA in the blood



P-CD19CD20-ALLO1 – Poseida’s first dual CAR-T is being developed in partnership with Roche

Differentiated, carrying 2 full length CARs and other Poseida platform elements¹



- Relapse due to target escape remains a common problem in B-cell malignancies
- Early autologous CD19/CD20 CAR-T data suggests dual targeting can be more effective

*Preclinical data planned for ASH 2024; Clinical data planned for 2025**

Clinical Trial

- Phase 1 study enrolling selected B-cell malignancies, prior Auto CAR-T and TCE is allowed (NCT04960579)
- 3x3 design, with flexibility for expansion, exploring multiple LD regimens

Status

- Multiple learnings from other Poseida programs have been incorporated
- Dose escalation is ongoing

P-CD19CD20-ALLO1 is a potent CAR-T product against CD19- and CD20-dual positive B-Cell malignancies NEW DATA

- High in vitro potency against CD19- and CD20-positive Raji model
- High in vivo antitumor efficacy across CAR-T lots produced from multiple healthy donors and dose levels

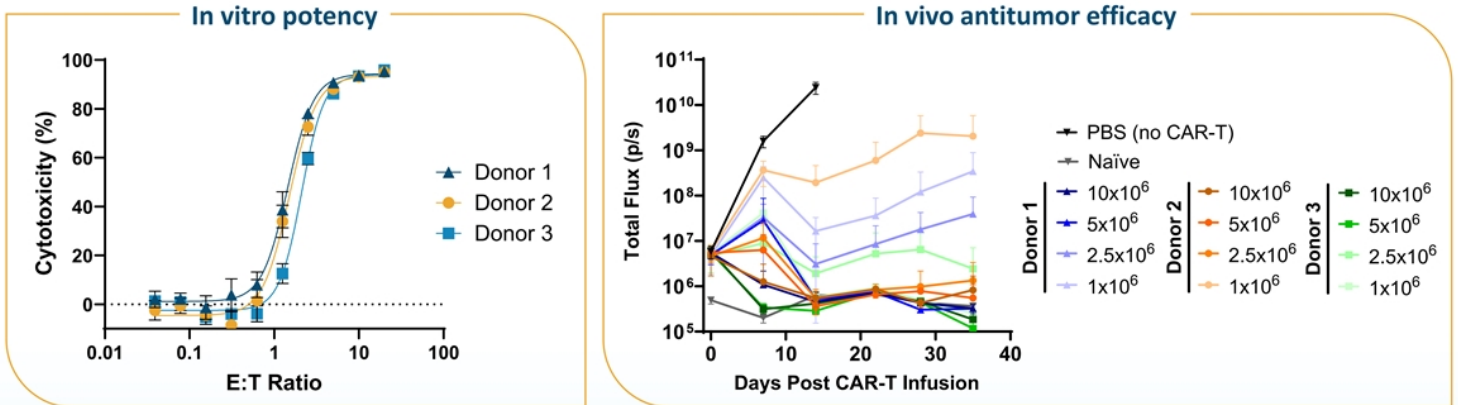


Figure 2. P-CD19CD20-ALLO1 CAR-T cells produced from three healthy donors exhibit robust antitumor efficacy against CD19- and CD20-dual positive Raji Burkitt's lymphoma cell line in vitro and in vivo. Left Panel. Luciferase-expressing WT Raji cells (CD19+CD20+) were co-cultured for 48 hours with P-CD19CD20-ALLO1 CAR-T cells at the indicated Effector:Target (E:T) ratios and viable cells were quantified using a luminescence-based assay. Cytotoxicity was calculated by normalization to Raji cells alone samples. Right Panel. NSG mice were intravenously implanted with WT Raji (CD19+CD20+) cells and received 4 days later the indicated doses of P-CD19CD20-ALLO1 CAR-T cells. Tumor burden was monitored by bioluminescence imaging. Data is presented as mean ± SEM (n=5 mice/group).

P-CD19CD20-ALLO1 may prevent relapse due to antigen escape by targeting single-positive tumor cells

- P-CD19CD20-ALLO1 shows **dose-dependent and high tumor control** in two in vivo models of antigen escape

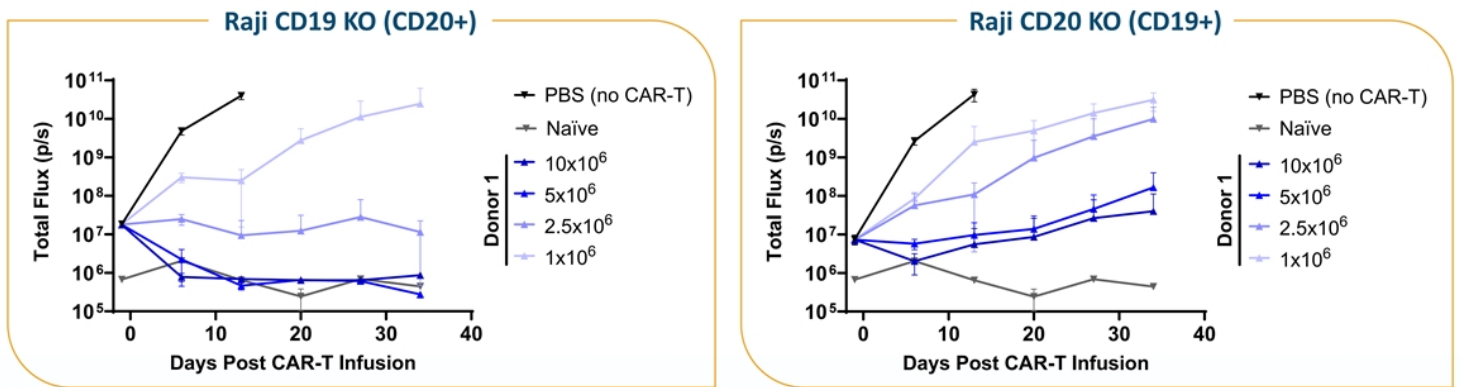
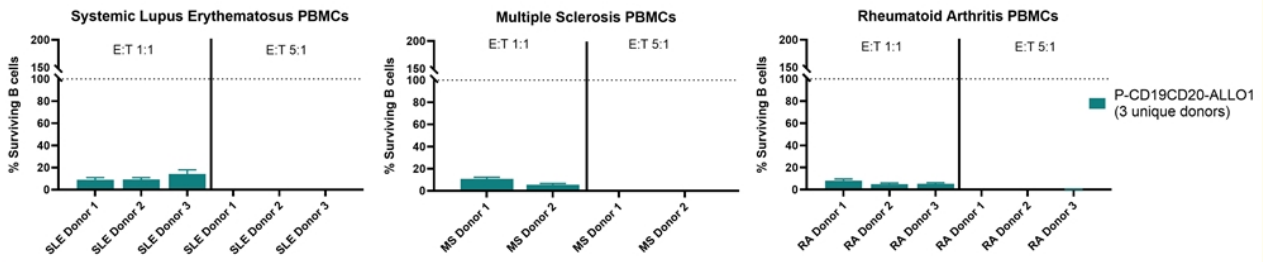


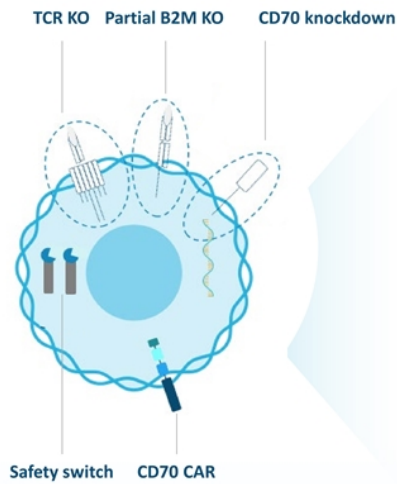
Figure 3. Dual-targeting P-CD19CD20-ALLO1 CAR-T cells can prevent relapse due to antigen loss. P-CD19CD20-ALLO1 show strong in vivo antitumor efficacy against Raji cells genetically engineered to express only CD20 (CD19 KO – left panel) or CD19 (CD20 KO – right panel) in a dose-dependent manner. NSG mice were intravenously implanted with CD19 or CD20-single positive Raji cells and 4 days later received the indicated doses of P-CD19CD20-ALLO1 CAR-T cells. Tumor burden was monitored by bioluminescence imaging. Data is presented as mean ± SEM (n=5 mice/group).

P-CD19CD20-ALLO1: Robust killing of B cells from primary human autoimmune PBMCs



- P-CD19CD20-ALLO1 assayed for cytotoxicity against B cells in primary human PBMCs from autoimmune patients (RA, SLE, MS)
 - Average of 3 lots of P-CD19CD20-ALLO1 (3 unique donors)
- Robust depletion of B cells in most samples at 5:1 E:T
 - No cytotoxicity observed against NK cells or macrophages above no CAR-T controls
 - CD20+ T cell depletion was expected and observed
 - ~5-8% of T cells in MS are CD20+; <2% in healthy donors
- Data are similar to P-BCMA-ALLO1 cytotoxicity against cancerous B cell lines

P-CD70-ALLO1: Introducing an IND-enabling stage asset with multi-indication potential, including in heme malignancies and solid tumors



Key features

Novel allogeneic, T_{SCM}-rich CD70-targeting CAR-T engineered for potency, safety, and manufacturability

- Unique shRNA knockdown of CD70 from a multi-cistronic transgene to avoid fratricide and increase potency, with no genotoxicity risk
- Potent cytotoxicity against CD70+ AML cell lines in vitro and in vivo, without impacting normal hematopoietic stem and progenitor cells
- Ablates CD70+ activated alloreactive lymphocytes, which may prolong persistence by inhibition of immune rejection (T cell shield)

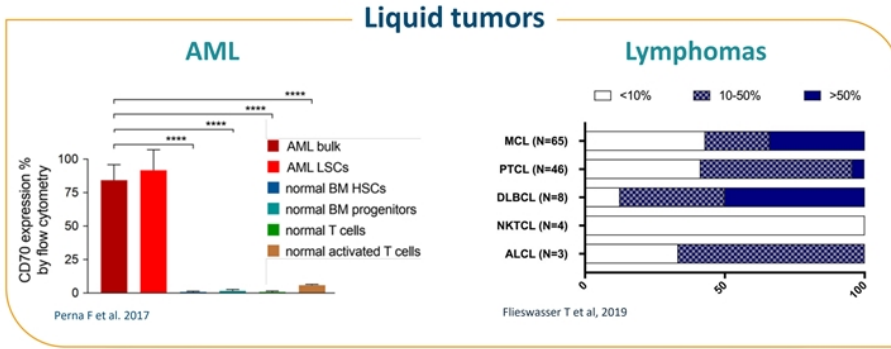
Proof-of-concept exists for use of CD70 approaches in solid (RCC) and liquid tumor (AML), including from early CAR-T studies and monoclonal antibodies

- Roche has an exercisable option on this program

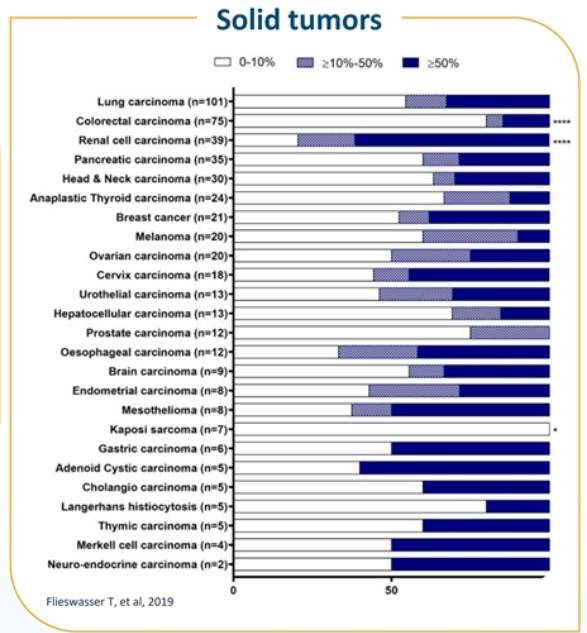
P-CD70-ALLO1 has great potential in high unmet medical need diseases

CD70 is an attractive antigen target for CAR-T, given expression levels as well as early clinical evidence in solid and liquid tumors

CD70 expression seen across tumor types



Early clinical validation of CD70 exists across modalities (CAR-T, ADCs) and therapeutic areas (AML, RCC)^{1,2}, with a **solid emerging safety record** attributed to no expression on normal hemopoietic stem cells³

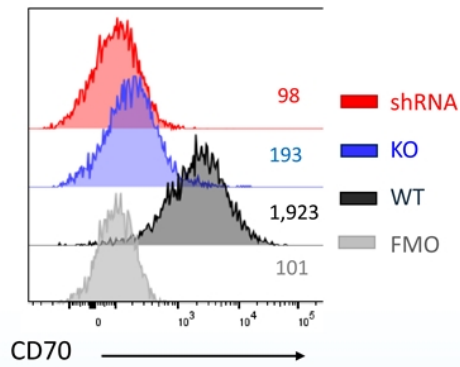


Poseida approach using robust shRNA-mediated depletion (knockdown) of CD70 yields CAR-T with optimal in vivo potency

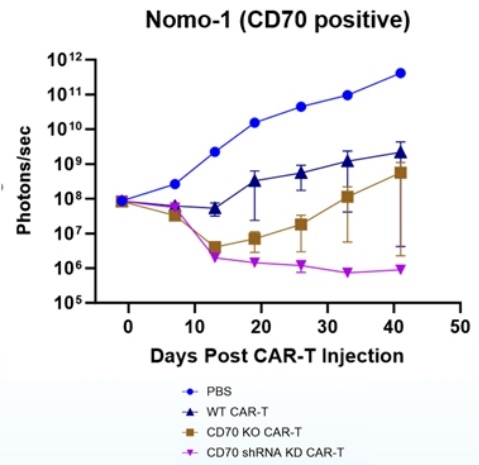


Superior to CD70 knockout through gene editing

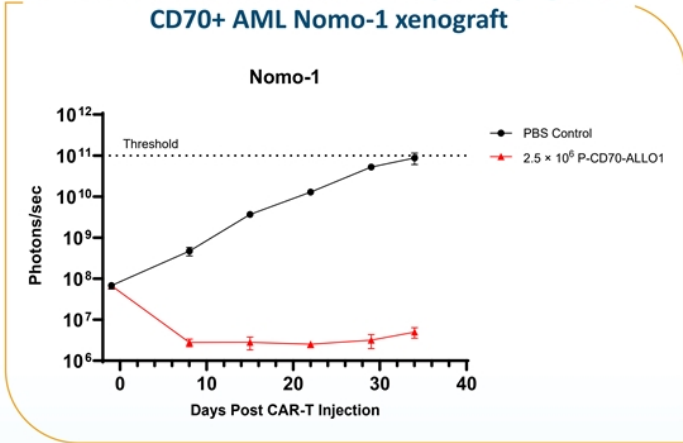
Highly efficient knockdown of CD70 in CAR-T cells using shRNA



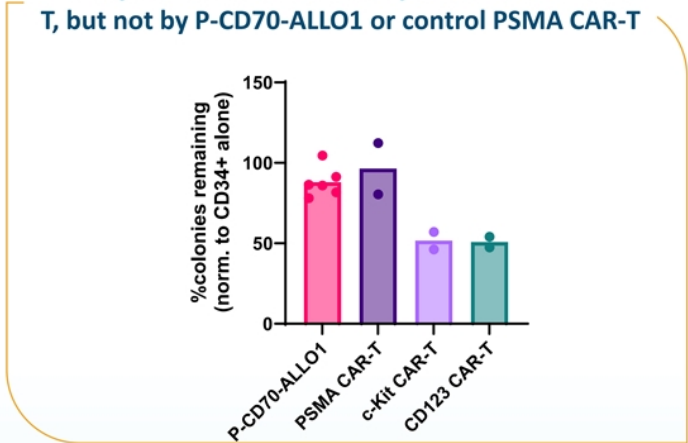
Robust in vivo activity against AML models



P-CD70-ALLO1 has robust in vivo potency against CD70+ AML Nomo-1 xenograft



Healthy donor HSC are killed by c-Kit & CD123 CAR-T, but not by P-CD70-ALLO1 or control PSMA CAR-T

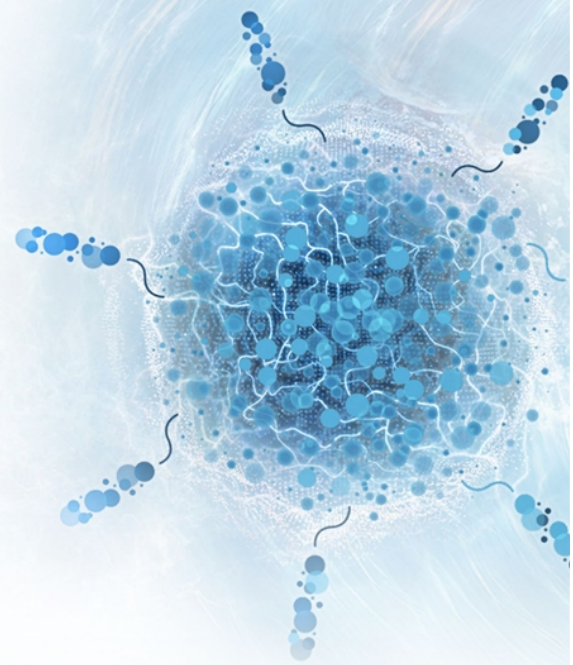




From hematology to autoimmune disease: Poseida's BCMA-CD19 dual CAR-T

Kurinji Pandiyan, PhD

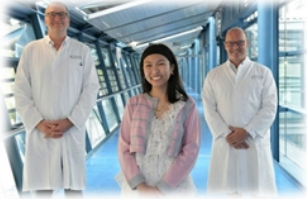
Vice President, Portfolio & Strategy



CAR-T and related immunotherapies show great promise and present new questions in autoimmune disease

2021

- Seminal results from Georg Schett group sparked explosive interest



- **Unmet need and market potential appear vast**

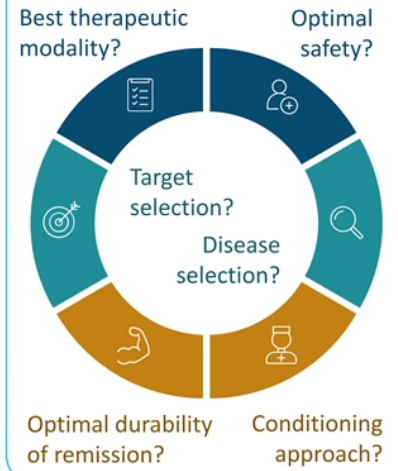
2022 – 2024

- Rapid pivot of oncology / cell therapy companies, especially allogeneic players
- Many trials underway in multiple diseases

Mixed Results:

- Encouraging early efficacy, including allogeneic
- Questions emerging on safety, durability of remissions

Today's questions



Poseida's clinically validated T_{SCM}-based platform is well-suited to autoimmune disease applications

DESIRED PROFILE OF IMMUNOTHERAPY FOR AUTOIMMUNE DISEASE

POSEIDA PLATFORM FEATURES

Efficacy

- Deep depletion of B cells, then rapid recovery
- Ability to target cell populations of interest

Safety

- Near term tolerability (CRS, neurotox, infections)
- Long term safety (secondary malignancies)

Patient reach & experience

- Immediate and reliable treatment
- Outpatient and community care settings

Manufacturing scalability for volume & COGS

- Ability to meet patient demand in higher – prevalent diseases
- COGS able to support AID volume proposition

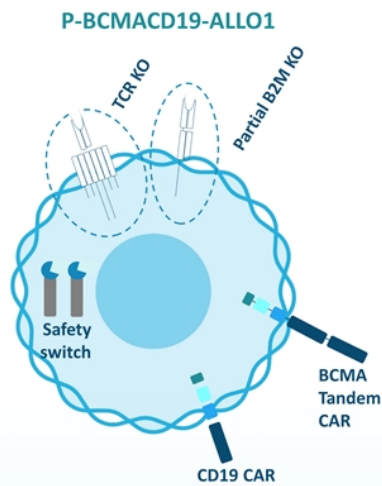
- ✓ **Clinical validation** of CAR-T_{SCM} through oncology work
- ✓ Pipeline programs include **targets of interest** (BCMA, CD19, CD20, CD70)
- ✓ **Transposon technology** enables multi-target dual CARs, CAR-TCRs

- ✓ Distinctively **low rates & mild** in oncology, despite higher cell burden
- ✓ Fully **non-viral** technology, rapid-acting **embedded safety switch**
- ✓ **High fidelity** gene editor

- ✓ Some Poseida oncology patients receiving all **treatment outpatient**
- ✓ Multiple **lymphodepletion strategies**
- ✓ **Off-the-shelf**, to simplify logistics and treat patients with no waiting

- ✓ Proven ability to **manufacture at scale** from **healthy donors**
- ✓ Targeting **biologics-like COGM**

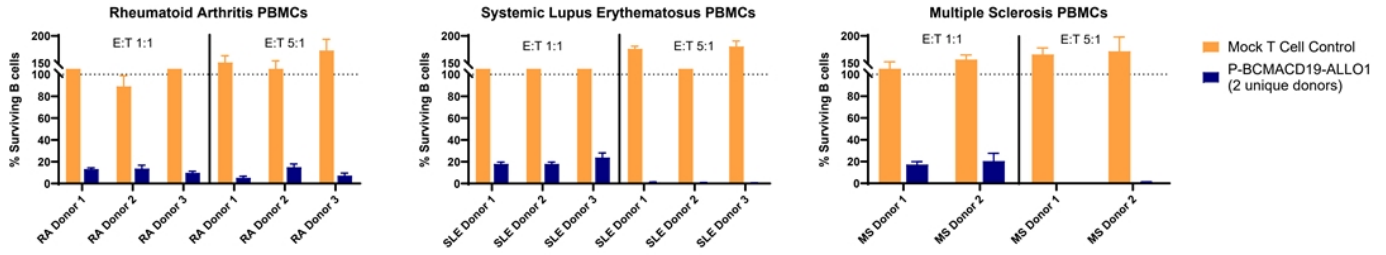
P-BCMACD19-ALLO1 (IND-enabling stage): Poseida's wholly owned investigational therapy for autoimmune disease and hematological malignancies



- **Potent cytotoxicity against BCMA and CD19, a key feature for both autoimmune disease and in oncology given cells that need to be targeted**
- **Key construct attributes:**
 - Dual CAR configuration, with tandem BCMA CAR, for optimal potency
 - Intracellular domain (ICD) combination gives superior potency
 - Incorporation of Poseida allo platform & process improvements
- **Preclinical proof-of-concept established for use of BCMA-CD19 in autoimmune and oncology models**
- **Clinical validation of dual BCMA-CD19 targeting with autologous CAR-T**

P-BCMACD19-ALLO1: Robust killing of B cells across multiple autoimmune diseases

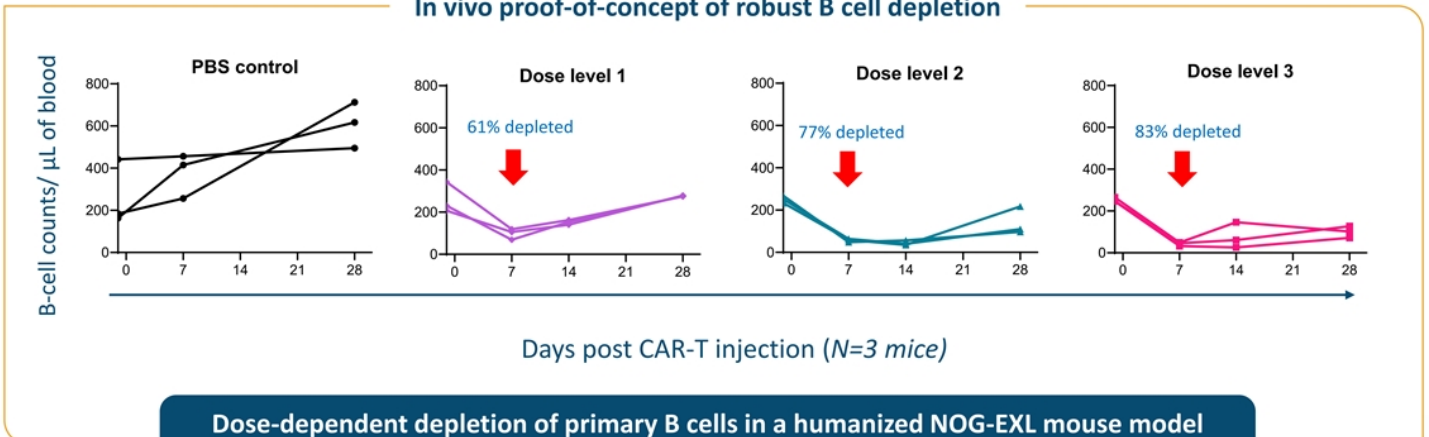
In vitro proof-of-concept in autoimmune disease



Robust in vitro elimination of primary autoimmune patient derived B cells across different effector to target ratios

P-BCMACD19-ALLO1 depletes primary human B cells in humanized mouse model

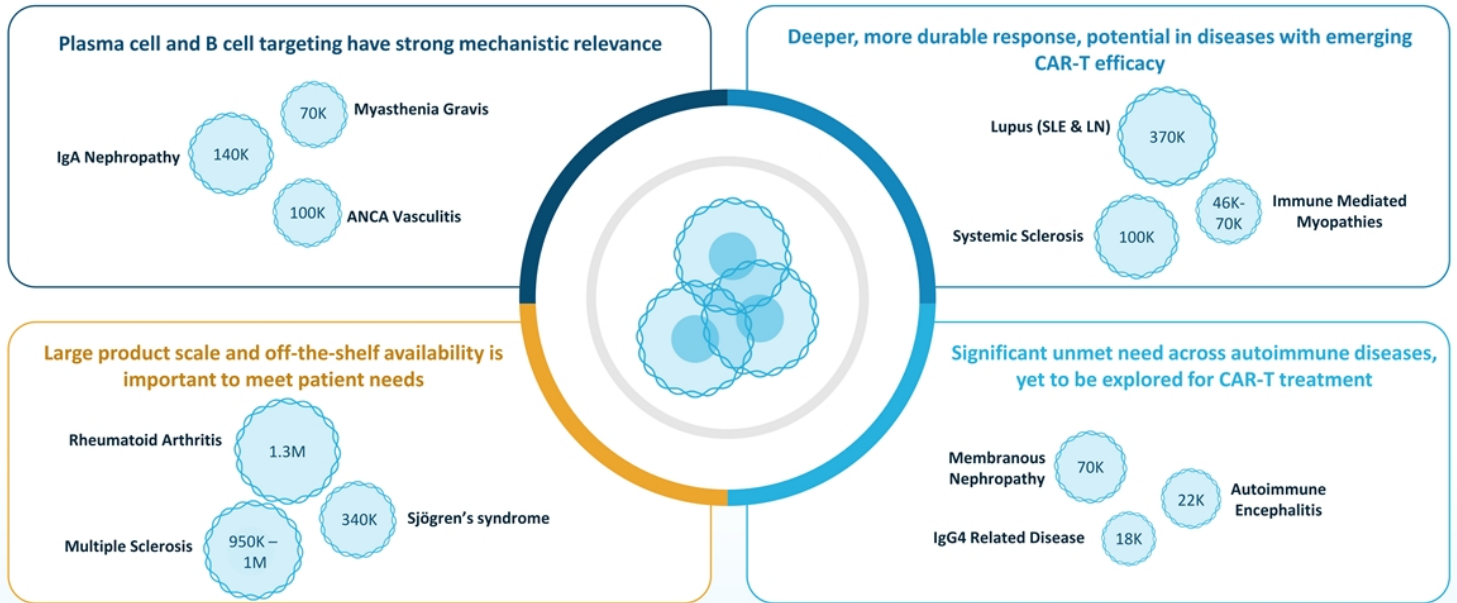
In vivo proof-of-concept of robust B cell depletion



Dose-dependent depletion of primary B cells in a humanized NOG-EXL mouse model generated with human CD34+ cells

Immense potential of P-BCMACD19-ALLO1 to address growing needs across autoimmune diseases

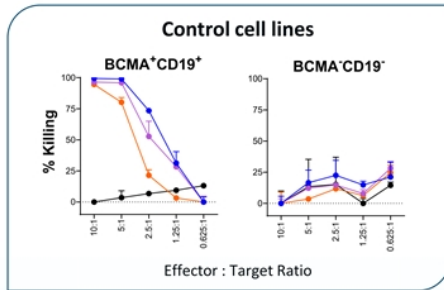
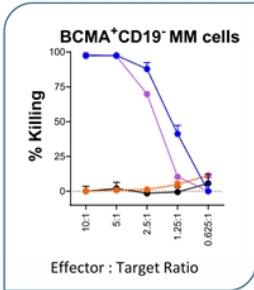
Illustrative examples, not exhaustive



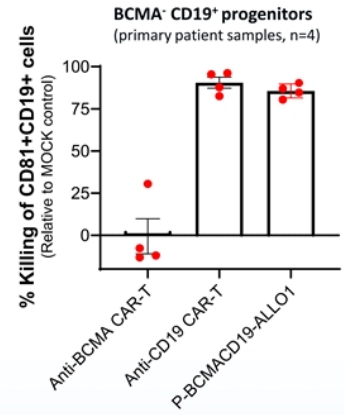
P-BCMACD19-ALLO1 effectively eliminates BCMA+ multiple myeloma bulk tumor cells and CD19+ bone marrow progenitor cells

Potent killing of MM cell lines with BCMA+ targeting

● P-BCMACD19-ALLO1 ● Anti-BCMA CAR-T ● Anti-CD19 CAR-T ● Mock T cell control

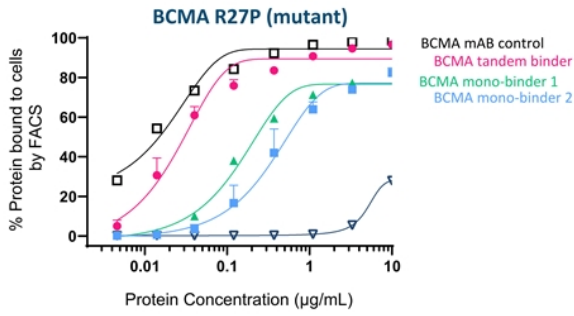


Progenitor killing with CD19+ targeting



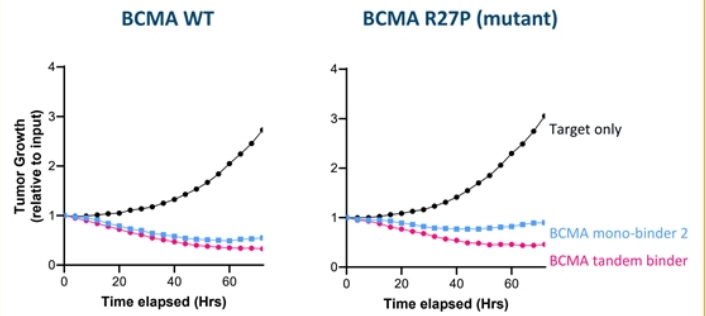
Tandem BCMA binder has equal activity against wild-type (WT) BCMA & identified clinical escape mutants, including teclistamab-associated mutation R27P

BCMA tandem binder effectively binds BCMA mutant



In vitro binding assay of BCMA R27P protein expressed by K562 cells via mRNA

Potent cytotoxicity against WT & BCMA mutant cells



In vitro cytotoxicity against K562 cells expressing BCMA WT or R27P mutant

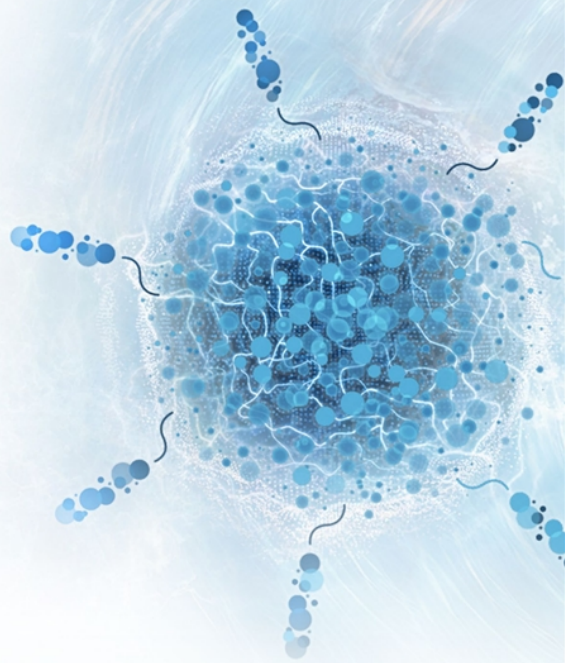
Note: Binding to other BCMA isoforms (WT, P33Del, P33S and S30Del) also confirmed (data not shown)



Waves of innovation in solid tumor cell therapy

Devon J. Shedlock, PhD

CSO, Cell Therapy



Solid tumors pose unique challenges for development, requiring bold innovations to overcome and address significant unmet need

No CAR-Ts approved for solid tumors*

Key roadblocks

Antigen Heterogeneity

CAR-T Cell Tracking & Infiltration

On Target Off Tumor Tox

Hostile Tumor Microenvironment

90%

of cancers are solid tumors¹

1.8M

Estimated incidence (U.S.)¹

550K

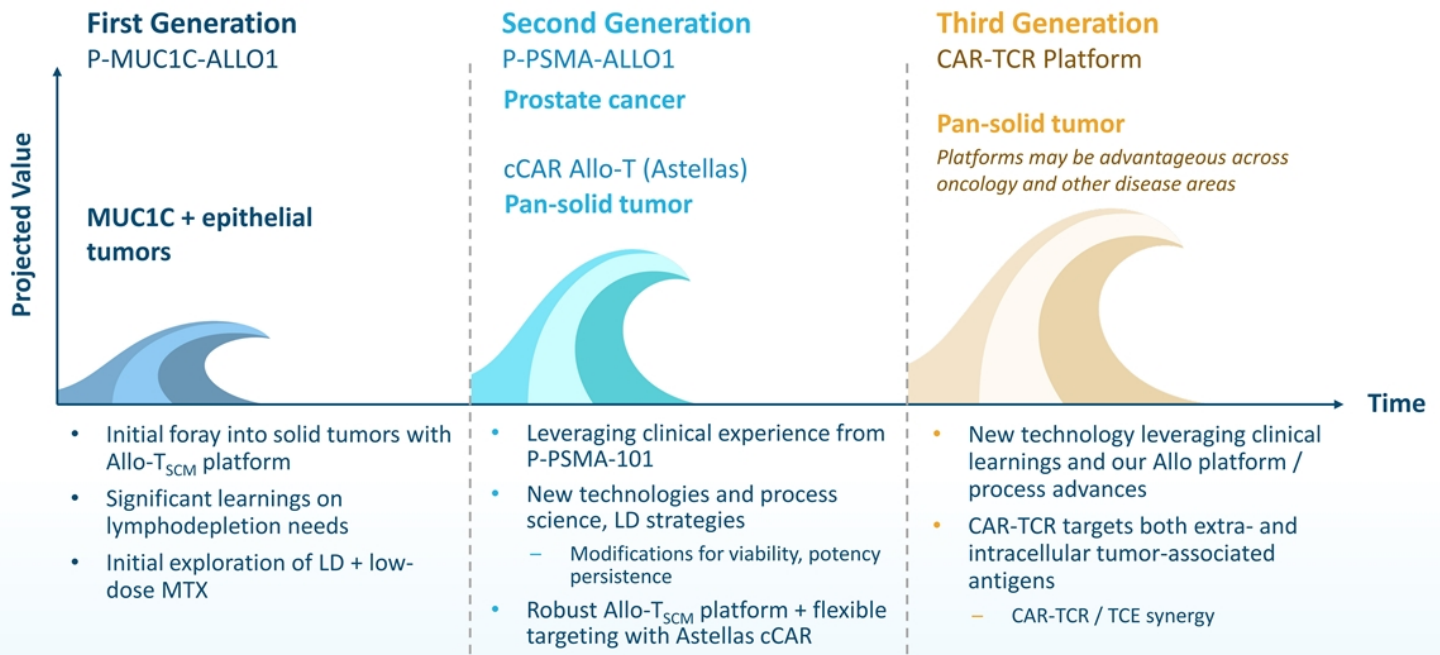
Patients dying annually (U.S.)¹

\$190B

Market size²

BOLD INNOVATIONS AN IMPERATIVE

Poseida's flexible platform sets up waves of innovation in allogeneic cell therapy for solid tumors, including entirely new platforms



P-MUC1C-ALLO1 is Poseida's lead solid tumor allogeneic CAR-T program

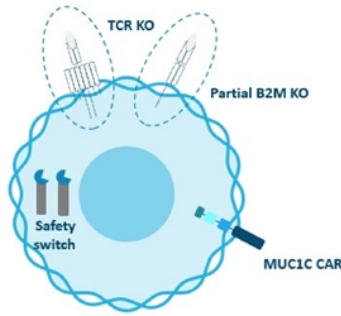
Motivation

- High unmet medical need in many epithelial cell-derived tumors
- Poseida's earlier autologous PSMA program showed clinical potential of T_{SCM}⁺-rich CAR-T in a solid tumor

Clinical Trial

- Phase 1 basket study enrolling treatment resistant breast, ovarian, colorectal and other tumors (NCT05239143)
- 3x3 dose escalation; Poseida-produced GMP product
- Ongoing exploration of dosing regimen and lymphodepletion

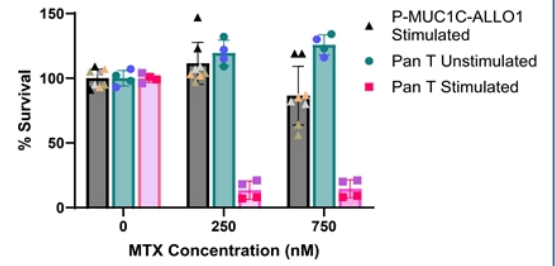
P-MUC1C-ALLO1



Unique approach to targeting MUC1C protein at tumor specific moiety

Also carries Poseida's platform¹ elements

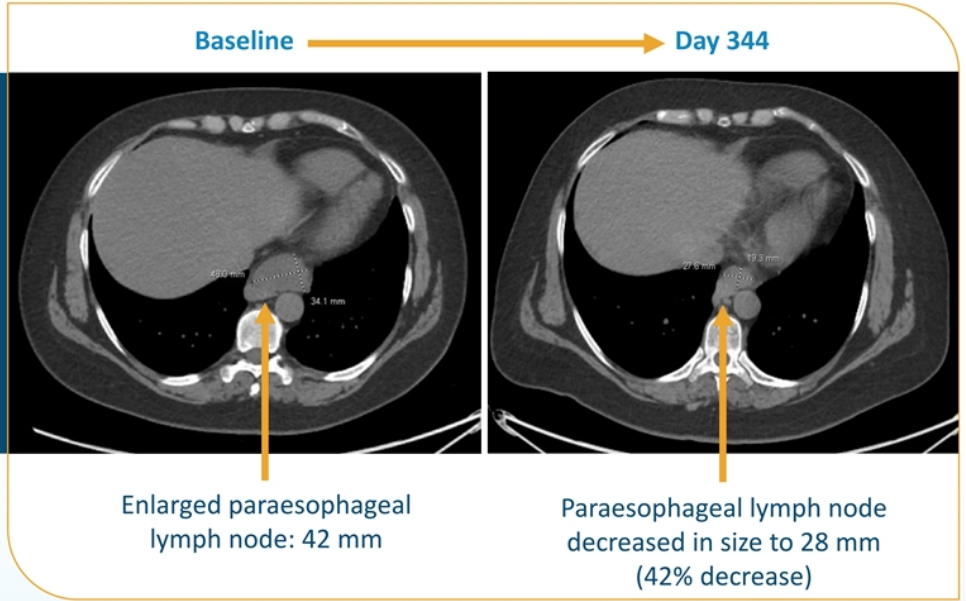
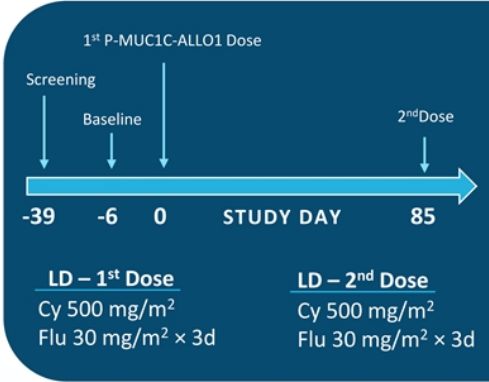
Exploit (MTX) resistance of Poseida's CAR-T for unique, additive LD strategy



- At low MTX doses, equivalent to those used for autoimmune disease therapy, activated T cells are killed, while P-MUC1C-ALLO1 cells are not
- LD/MTX approach may enhance CAR-T expansion/persistence and is in study design

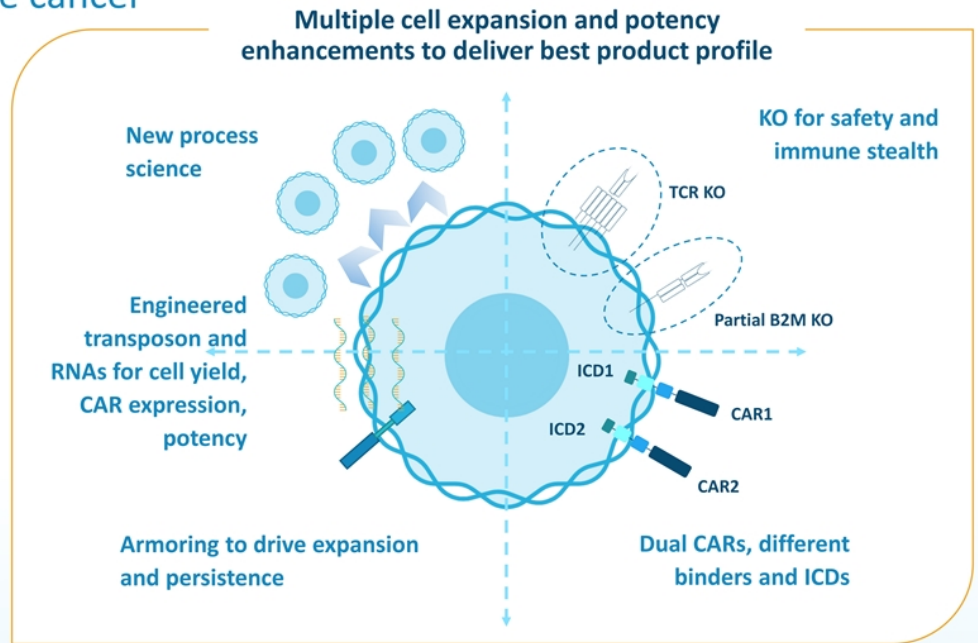
Data update planned for ESMO-IO 2024

Substantial tumor size decrease and prolonged stable disease (~1 year) in patient with heavily pretreated appendiceal carcinoma



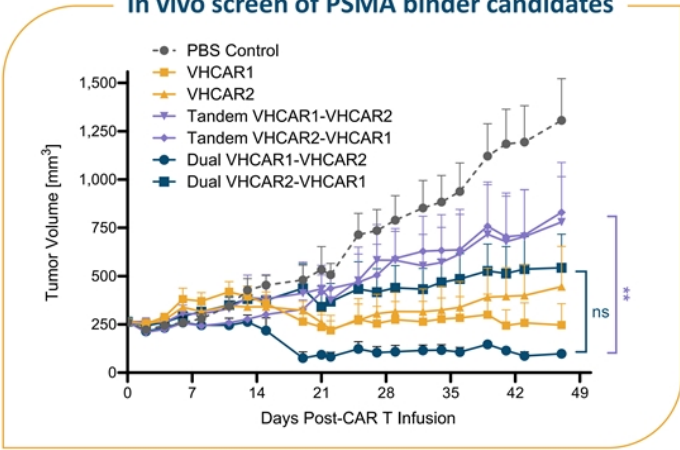
P-PSMA-ALLO1 builds upon Poseida's earlier PSMA autologous CAR-T program to tackle prostate cancer

- Dual CAR format has shown improved efficacy compared to the autologous program Centyrin™ binder in xenograft tumor models
- P-PSMA-ALLO1 includes latest process development and allogeneic CAR-T platform improvements for improved cell health, viability, potency, and persistence

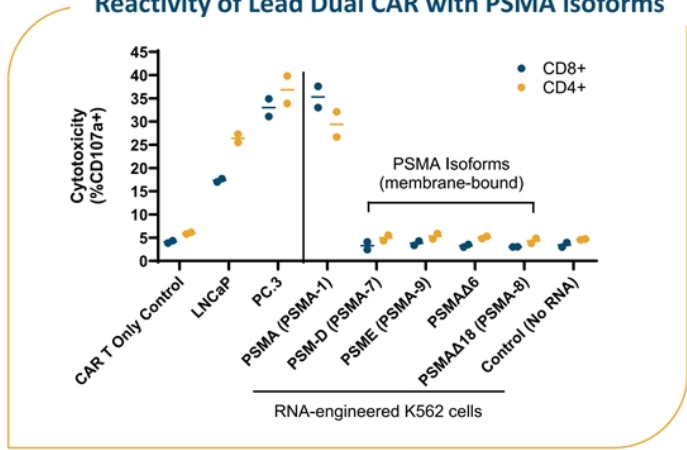




In vivo screen of PSMA binder candidates



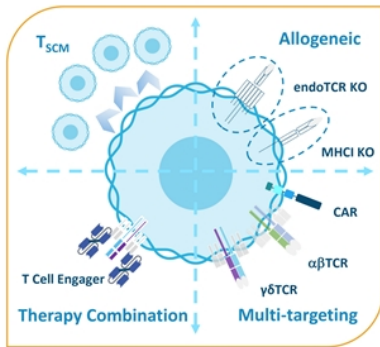
Reactivity of Lead Dual CAR with PSMA isoforms



- Dual biparatopic PSMA CAR-T outperforms tandem and single VH CAR-T in vivo
- Optimal combination of ICDs (E.g. CAR1-ICD1 + CAR2-ICD2) will be determined for PSMA dual CAR

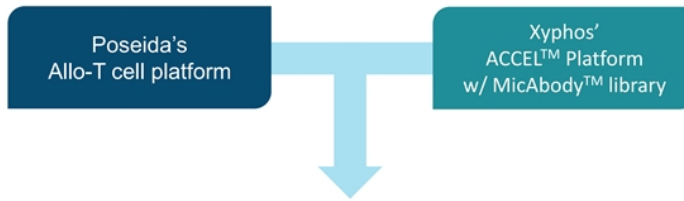
- CAR-T with selected binders do not bind alternative PSMA isoforms (expressed extratumorally)

Concept of Xyphos/Poseida Research collaboration for convertible Allo CAR-T_{SCM}

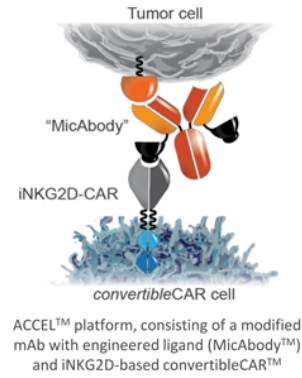


Key features of the Allo-T platform, with the range of possible modifications shown

Combine the Allo-T and ACCEL™ platform to target solid tumors



convertibleCAR™ expressing Allo-T cells

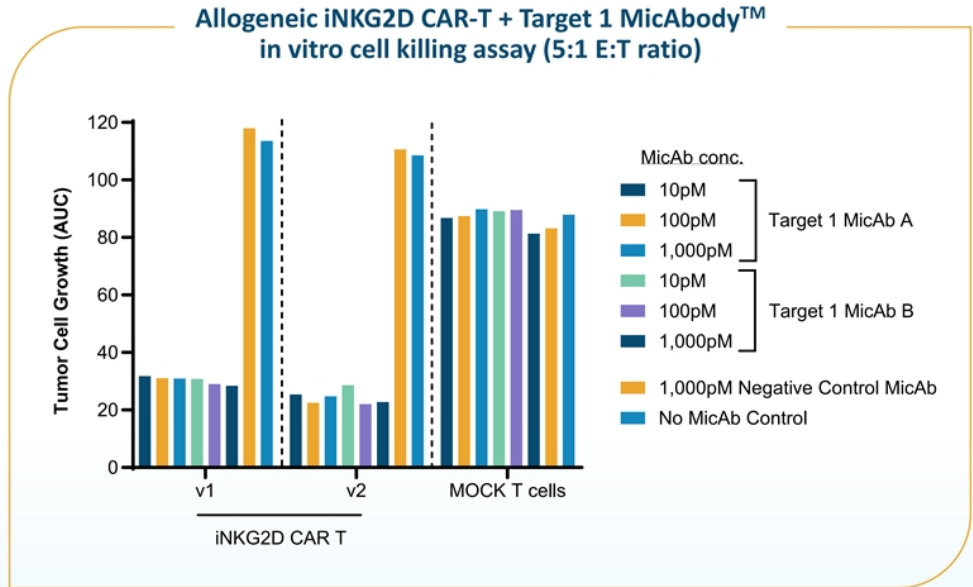


ACCEL™ platform, consisting of a modified mAb with engineered ligand (MicAbody™) and iNKG2D-based convertibleCAR™

- ✓ Combination of ACCEL™ and T_{SCM} aims to create a long lasting, highly active, but exquisitely controlled cancer killing CAR-T
- ✓ The collaboration will provide us with the opportunity to utilize clinical stage allogeneic T-cells to maximize the value of the ACCEL™ platform
- ✓ Xyphos' MicAbody™ Library will be used in conjunction with Poseida's ALLO-T platform
- ✓ **Single T-cell design (iNKG2D T) with efficient manufacturing process**

Allogeneic universal cCAR-T and solid tumor-targeting MicAbody™ demonstrate compatibility of Poseida, Xyphos platforms

- Allogeneic universal iNKG2D cCAR-T_{SCM} in the presence of solid tumor antigen-targeting MicAbody™ demonstrates potent, specific in vitro cytotoxicity
- Demonstrates potential to develop a highly flexible family of drug products consisting of a single off-the shelf Allo CAR-TSCM matrixed with multiple MicAbodies™



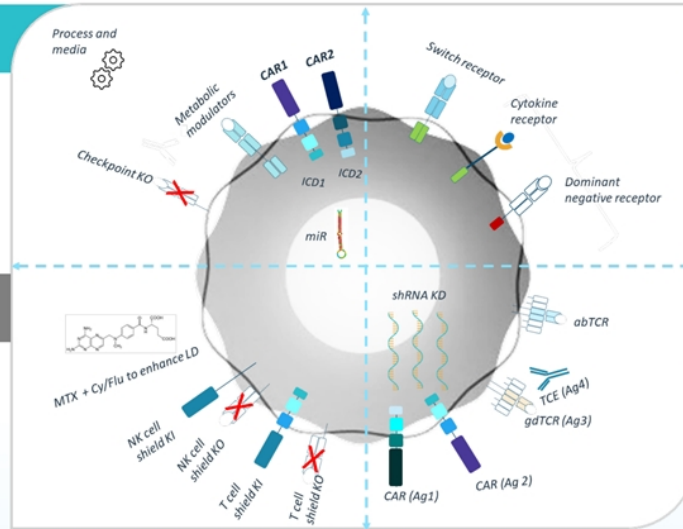
Poseida is systematically exploring next-generation improvements for solid tumors to be used in 'third-wave' innovation

Potency and persistence

- Cell health, cell activation, and pathway utilization for maintenance of stemness and optimal potency

Immune escape

- T cell and NK cell shields can increase drug exposure via decreasing rejection by host immune cells



Armoring

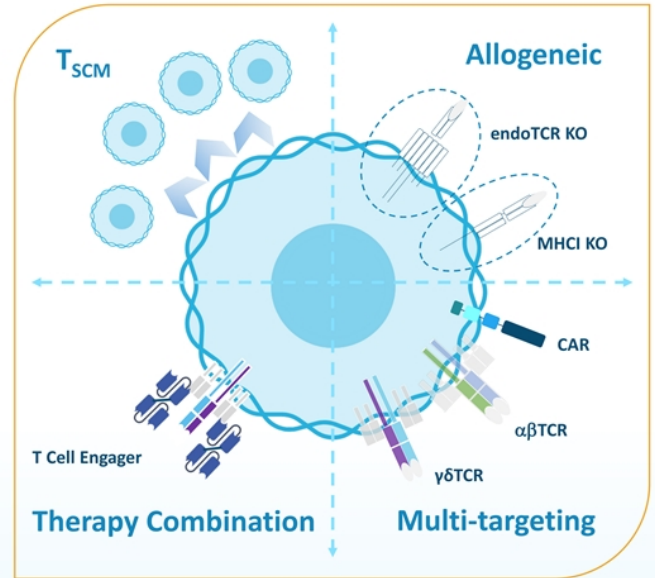
- Armoring can block TME suppressive signals or co-opt for activation and expansion

Multi-Antigen targeting

- Transposon transgene can express multiple CARs, $\gamma\delta/\alpha\beta$ TCR, enables use of TCE for targeting up to 4 unique antigens with a single CAR-T

A new platform for tough tumors: Poseida's combination CAR-TCR technology is designed to address the challenges of adoptive cell therapy for solid tumors

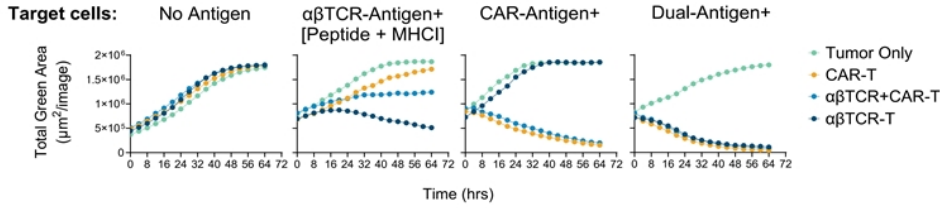
- Inclusion of one or more CARs and TCRs simultaneously (CAR-TCR technology) is enabled by large transposon cargo capacity
- Can combine classic CAR + $\gamma\delta$ TCR or $\alpha\beta$ TCR in single products
- CAR-TCR addresses the heterogeneity of solid tumor antigen expression:
 - Recognize both cell-membrane (CAR) and cytoplasmic (TCR) antigens
 - Capable of engaging TCE therapeutic against a 3rd target
 - Potential to be used with TCR-T-priming reagent or vaccine
- CAR-TCR potency and persistence:
 - TCR provides additional survival signal for cell persistence
 - TCR maintains high memory, low exhaustion phenotype for longer duration
 - $\gamma\delta$ TCR may have advantages for trafficking, without need for HLA matching or GVHD risk



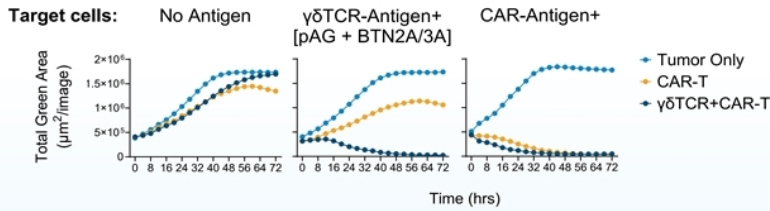
CAR-TCR T cells exhibit strong functional capabilities against both cell surface CAR target and intracellular TCR target

Allo CAR + abTCR or CAR + gdTCRs kill single and double-Ag positive tumor cells

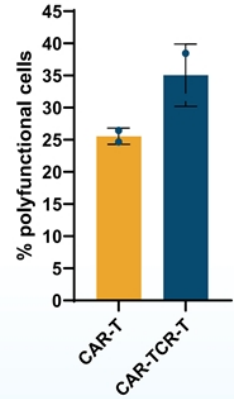
MUC1C CAR + NY-ESO-I $\alpha\beta$ TCR



MUC1C CAR + pAg $\gamma\delta$ TCR

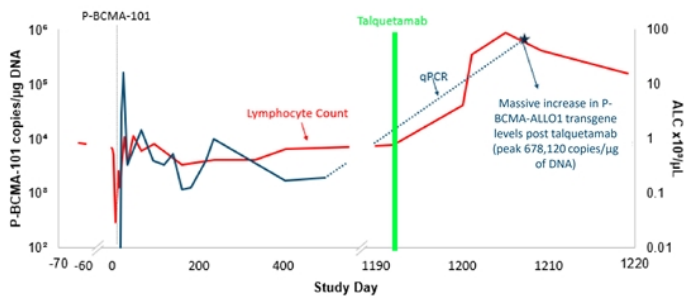


When exposed to double Ag+ cells, a higher % of Allo CAR + $\alpha\beta$ TCR vs CAR-T express ≥ 2 immune mediator cytokines



Inspirational case study: T cell engager reactivation and redirection of CAR-Ts

TCE talquetamab caused dramatic benign P-BCMA-101 reactivation years after CAR-T administration



- Pt received autologous P-BCMA-101, and achieved a sCR; in remission ~31 mo
- >3 years after P-BCMA-101, pt received 1 wk of GPRC5D TCE - talquetamab
- Dramatic benign polyclonal re-expansion of P-BCMA-101
- **sCR > 10 mo from last dose of TCE**
- Observation is possibly a unique feature of T_{SCM}-rich CAR-T products, such as P-BCMA-101, that demonstrate tropism for the bone marrow and are more likely to result in durable engraftment

“This case study demonstrates the remarkable potential of T stem cell memory-based therapies, providing a strong anti-myeloma response with a long-term remission and, notably, CAR-T cell persistence.

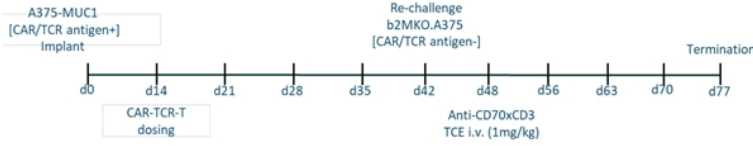
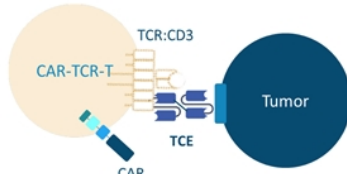
Most notably, we believe this is the first time that a T-cell engager has been seen to reactivate a CAR-T therapy, and the evidence suggests that this reactivation drove a second wave of CAR-T cell proliferation that led to another complete response three years after the initial successful CAR-T treatment. This patient is now off all anti-myeloma treatments and living in remission for more than nine months following 1 week of TCE therapy, a truly amazing outcome.”

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



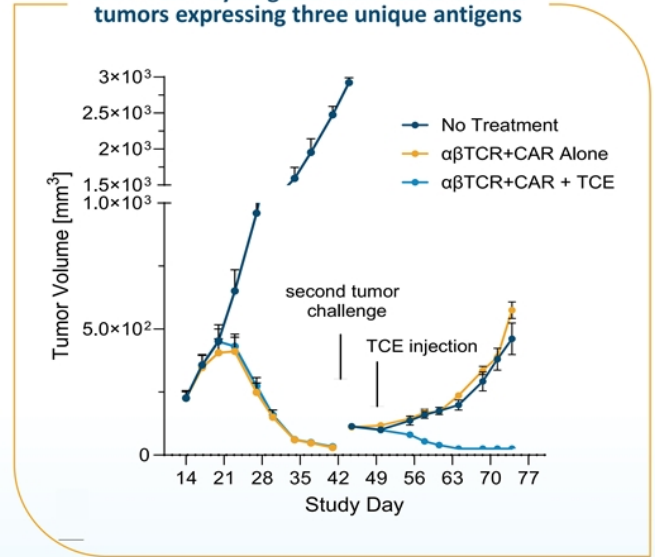
Designing the CAR-TCR+TCE approach to work in allogeneic cell therapy: T cell engager reactivation and redirection of TCR+ CAR-Ts

Patent filed



- MUC1C-CAR + NY-ESO-1-TCR T cells:
 - controlled primary tumor (MUC1C⁺/NY-ESO-1⁺/CD70⁻)
 - later, were **re-activated and re-directed** by administration of a CD70 T cell engager (TCE) to control challenge by a secondary tumor (MUC1C⁻/NY-ESO-1⁻/CD70⁺)

CAR+TCR-T synergized with TCE to control tumors expressing three unique antigens





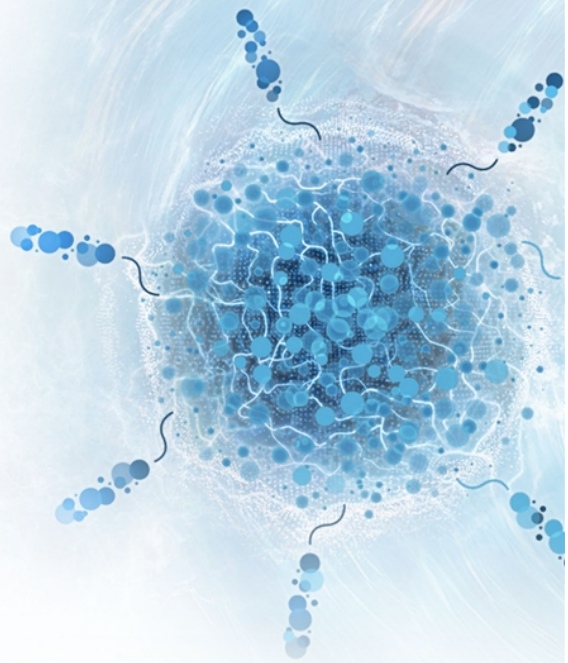
The power of partnerships fireside chat

Karen Basbaum

*SVP, Business Development
at Poseida Therapeutics*

Peter Sandor, MD

*EVP, Head of Corporate Strategy
at Astellas Pharma*

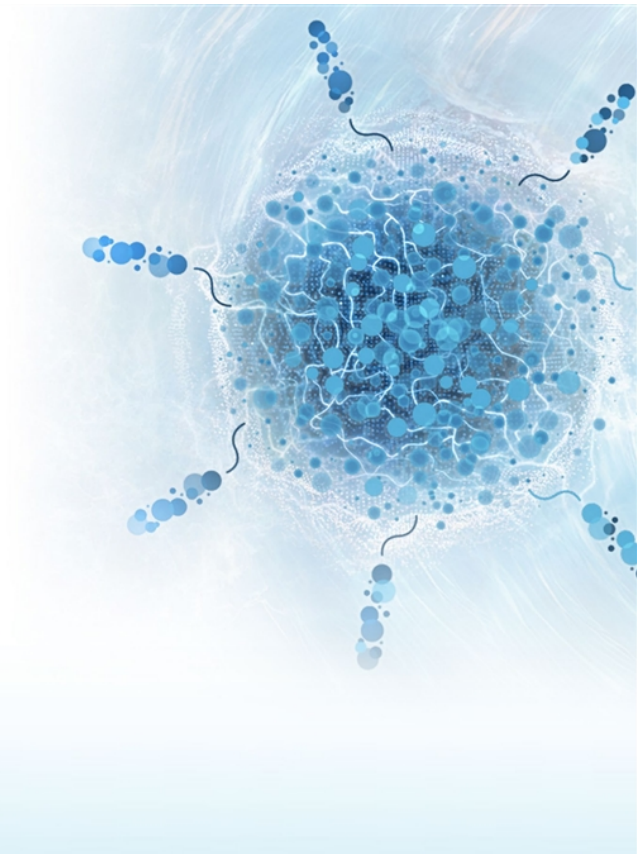




In-house GMP manufacturing capabilities

Loren Wagner

Chief Operations Officer



Poseida manufactures GMP allogeneic CAR-T in house for higher yields and lower COGS

Facility supports current needs for three allogeneic programs while simultaneously advancing our platform



POSEIDA'S ALLOGENEIC VS. AUTOLOGOUS PLANT

- ~1/10 facility size for comparable output¹
- Far lower labor and operating costs²
- On demand product delivery to site of care
- Reach 100% of patients via stored inventory
- Targeting biologics-like COGS

Efficient | Accessible | Flexible | Cost Effective | Off-the-shelf

Poseida's consistent platform reflects a holistic systems engineering approach to CAR-T set to deliver product after product

Robust healthy donor screening system

Non-viral gene insertion and gene editing approaches the same across all programs, and customized for T_{SCM} cells

"On-demand" delivery of therapy from inventory through supply chain

Proprietary **Booster Molecule** improves manufacturing yield

Allogeneic CAR-T Enterprise
Poseida's platforms enable the "capacity to cure" in a new class of CAR-T therapies

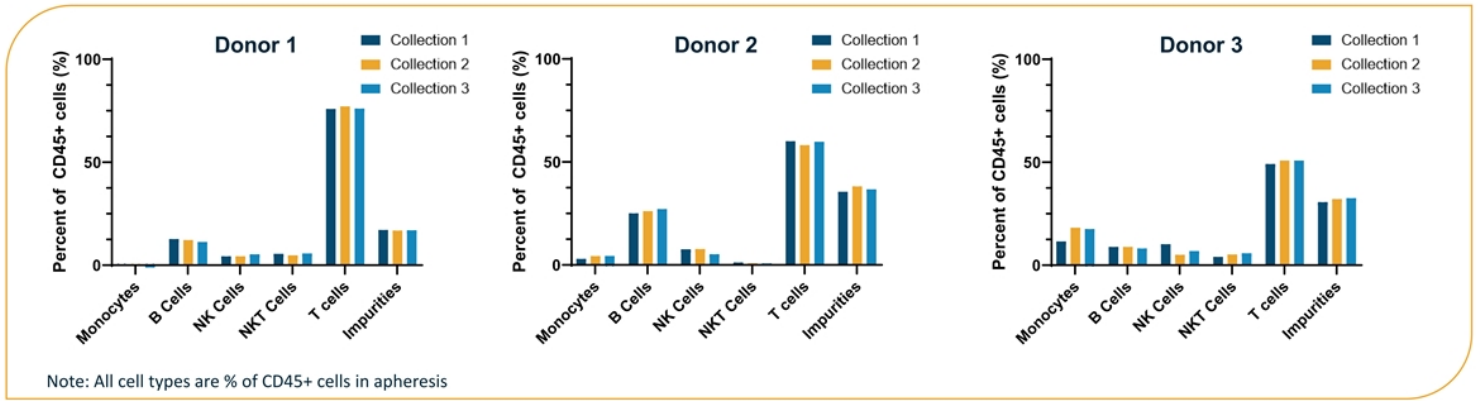
Selectable marker supports purification so that nearly all cells are CAR-carrying, with the potential for optimal therapeutic index

Safety "switch" to selectively eliminate CAR-T cells in the patient, if necessary

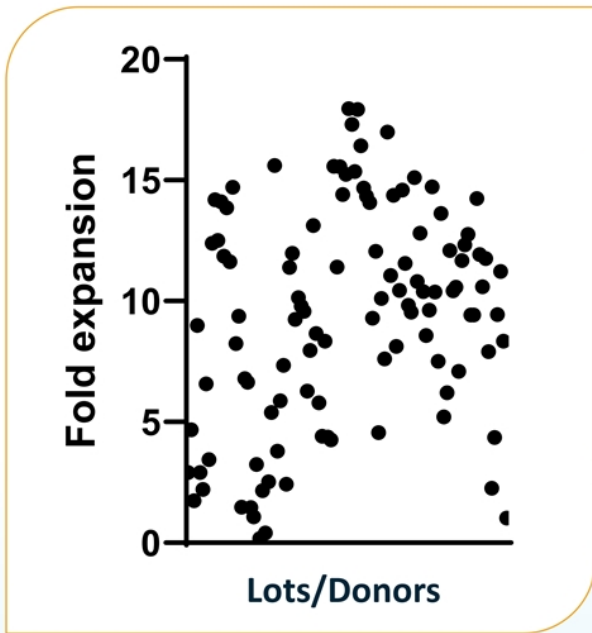
Unit operations optimization across process development and quality, applied to all programs

Poseida has taken a deliberate platform approach to develop a pipeline of allogeneic CAR-T programs that use the same proprietary technologies, the same manufacturing platform and reflect similar production methods

Apheresis purity is variable among donors but consistent between collections



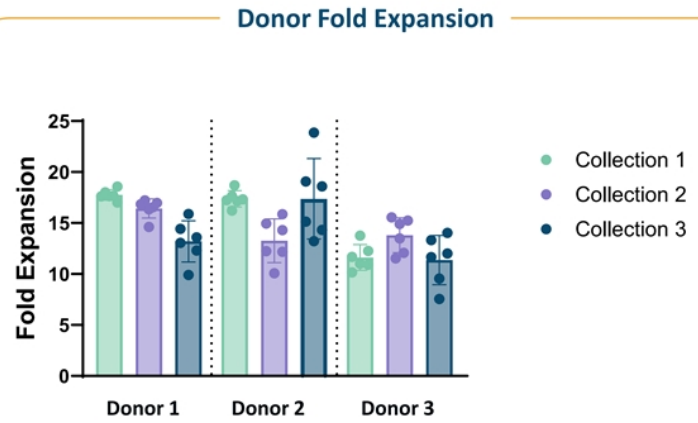
- All collections from a particular donor have similar cellular distributions in the apheresis
- Cell distribution in the apheresis is donor-dependent

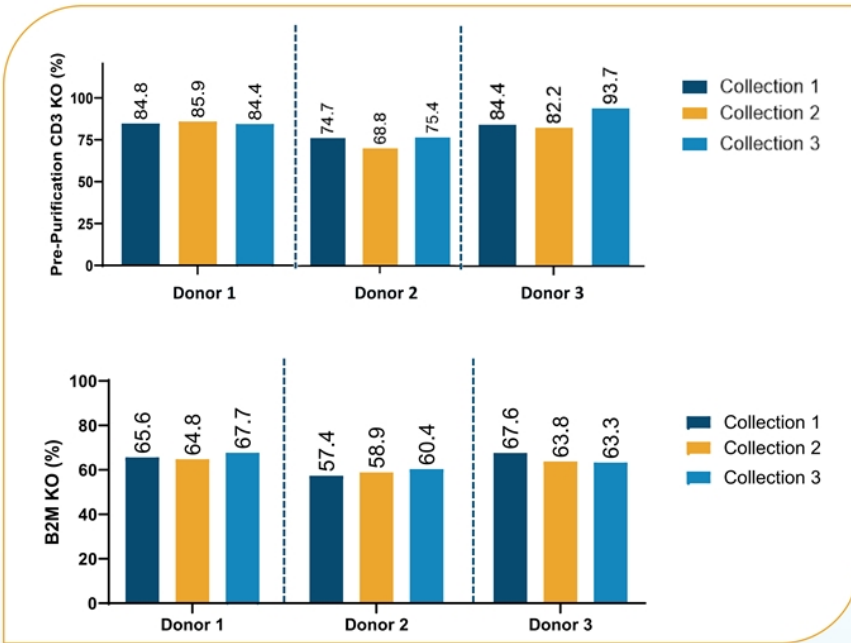


There is significant donor variability in fold expansion during CAR-T cell manufacturing

Fold expansion is consistent across multiple collections from the same donor

- Donors had slightly differential levels of expansion but were overall **within a consistent and predictable range**
- Donors had **consistent expansion across multiple collections**

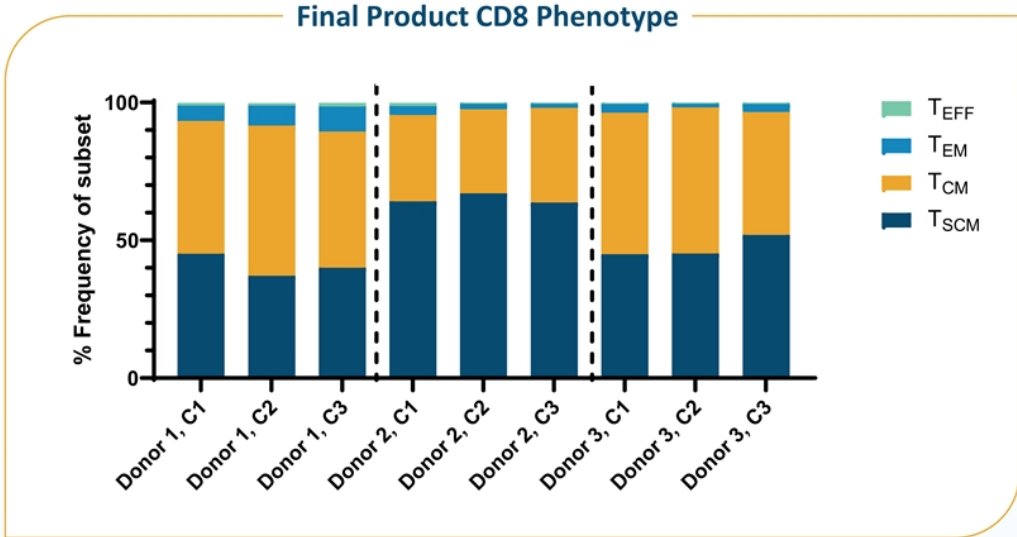




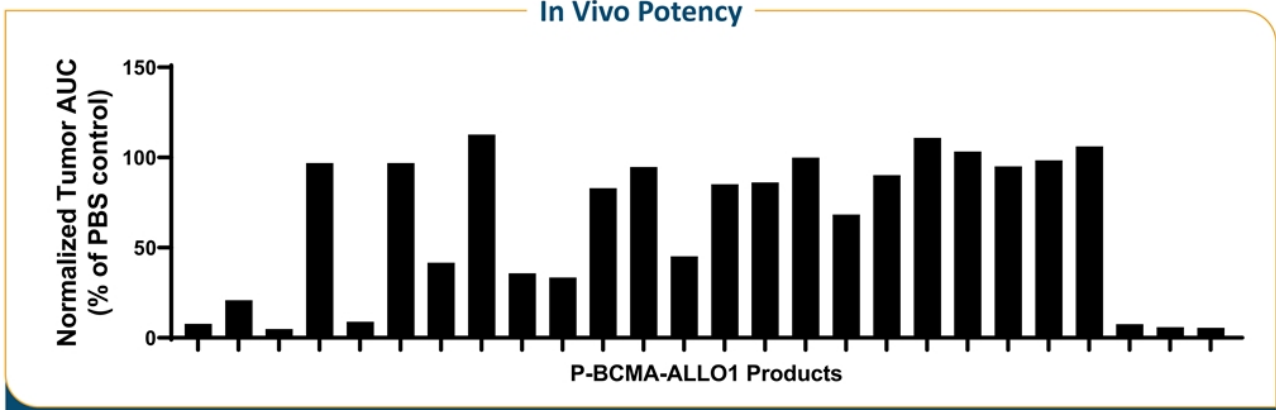
Pre-Purification CD3 KO and B2M KO is donor-dependent

- Donor 1 and Donor 3
 - ~80-90% (CD3 KO)
 - ~63-67% (B2M KO)
- Donor 2
 - ~68-75% (CD3 KO)
 - ~57-60% (B2M KO)

Final product phenotype is donor-dependent but consistent across multiple collections

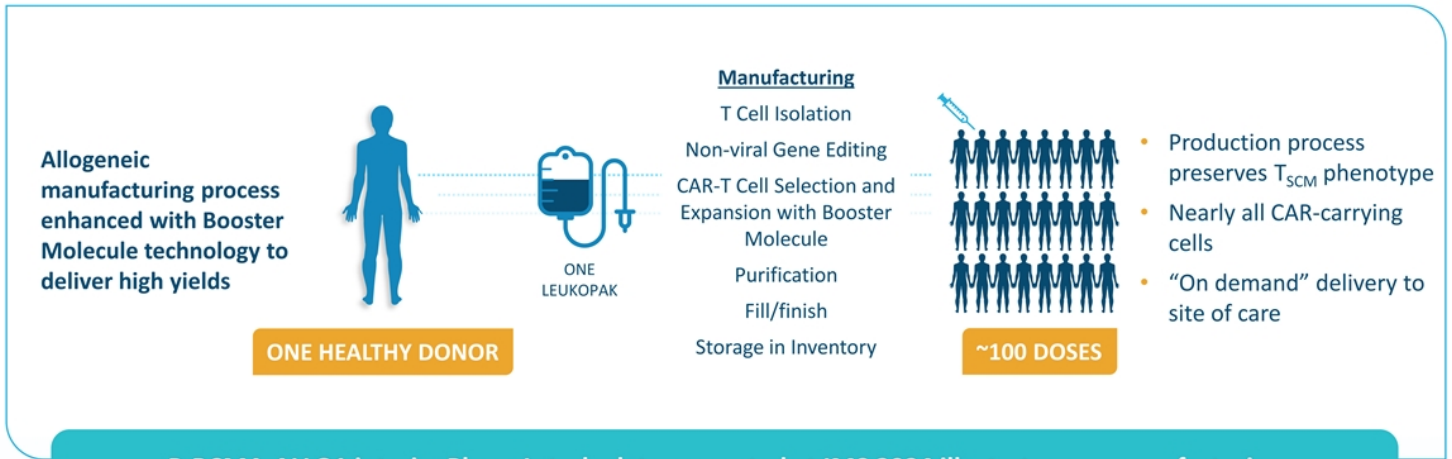


Final product potency is donor-dependent but consistent for an individual donor



- There is donor-dependent variability for in vivo anti-tumor potency
 - This potency is relatively consistent with repeat donor collections and productions
 - Most variability in potency over repeat collections is due to changes in process/manufacturing

Poseida's manufacturing platform, used across all products, delivers T_{SCM}-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

Future manufacturing platform enhancement opportunities



Donor screening data is a ripe space for cellular analysis via artificial intelligence. Advances in this space can create a faster and more economical way to assess potential donors.



Gene editing is the most sensitive and critical element of the manufacturing process. Advances in electroporation unit operations can improve editing, reduce the need for later depletion, and improve cell health throughout the process.



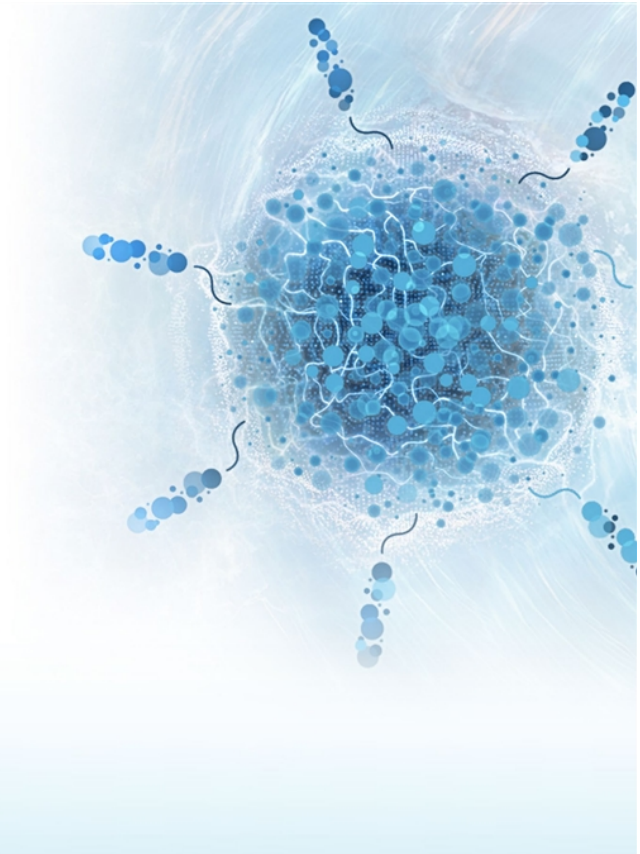
Poseida manufacturing processes to date have used static expansion flasks. Dynamic bioreactor environments and Booster Molecule enabling technology have the potential to unlock significantly higher yields, which results in lower cost of goods and a smaller required pool of donors.



Concluding remarks

Kristin Yarema, PhD

President & CEO



Strong partnerships with Roche and Astellas validate allogeneic platform and fund programs

- Deal worth up to **\$6 billion** in aggregate value, plus royalties
- Currently **three heme malignancy** collaboration programs
- **\$80 million** in milestone payments earned to date in 2024

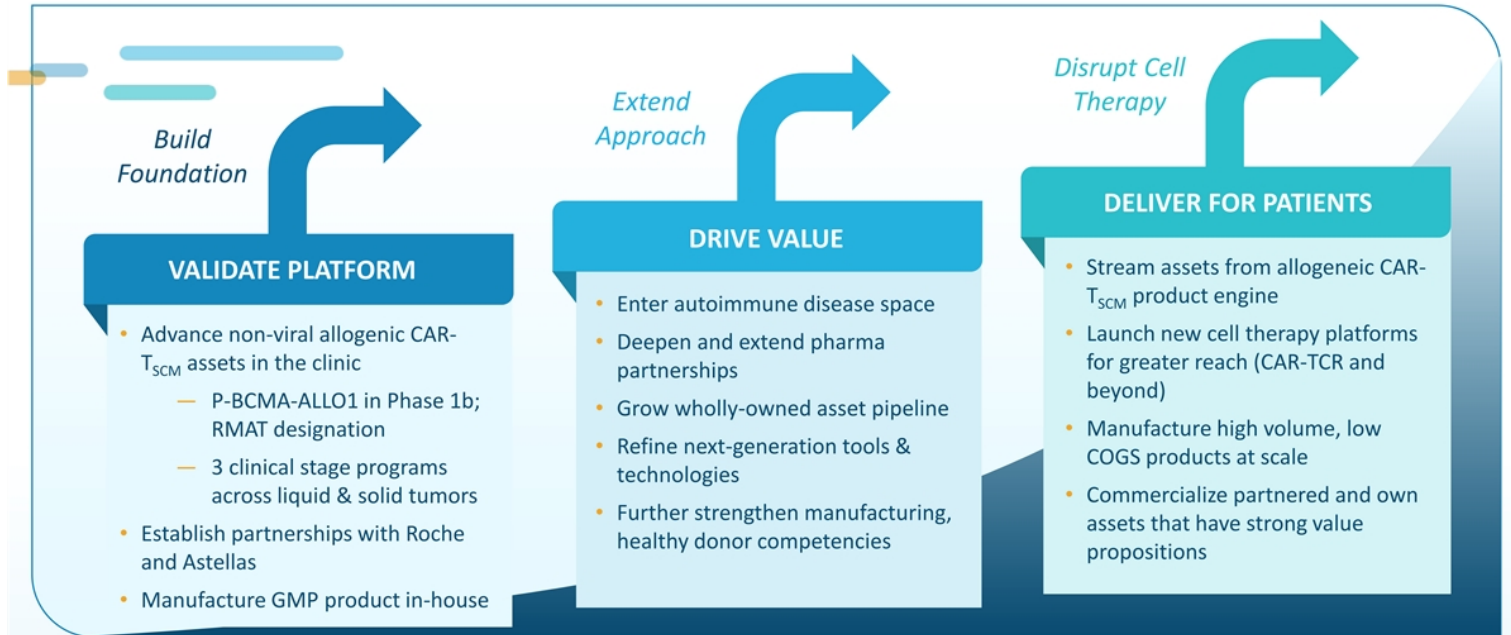


- **\$50 million** upfront plus up to **\$550 million**, plus royalties
- Combines Poseida allogeneic platform with Astellas technology for up to two **'convertibleCARs™'** for solid tumors
- Follows an earlier **\$50 million equity investment** in Poseida

More than \$400M generated through external partnership payments, upfronts and milestones over the past three years

Poseida's path to value creation in allogeneic cell therapy

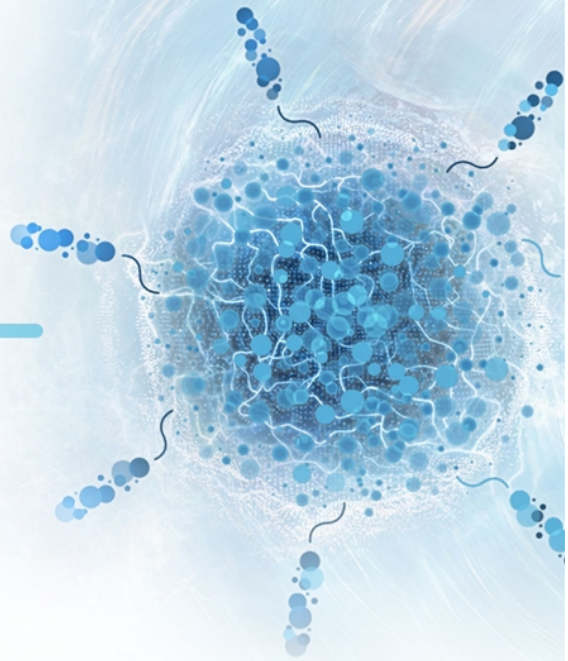
Presently heading into our second growth horizon





Thank You

To our patients, partners and dedicated Poseida teams for supporting our bold mission to redefine the future of cell therapy for life-threatening cancers and autoimmune diseases





Q&A

Type your question in the text box below

