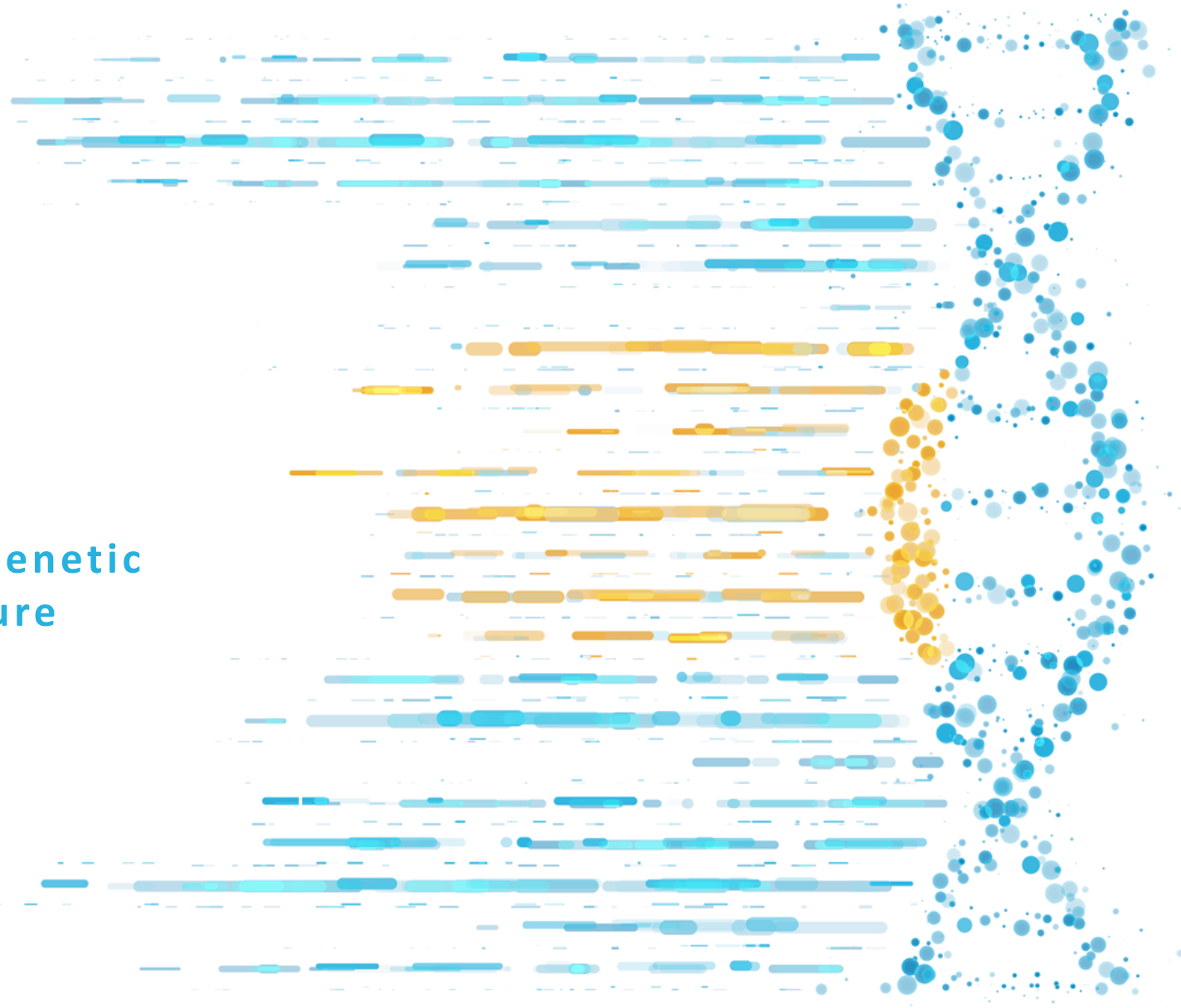
POSEIDA THERAPEUTICS

Corporate Presentation

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



NOVEMBER 2024

Disclaimer

This presentation contains "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, manufacturing and regulatory activities; estimated market opportunities for product candidates; 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; estimates of the Company's cash balance, cash runway, expenses, capital requirements and any future revenue; 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 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 and payments under our collaboration agreements; risks associated with conducting clinical trials; 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; 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.

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

Roche

astellas

MOST LOVED WORKPLACE® Certified 2024

GENETIC MEDICINES

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

GEN Genetic Engineering & Biotechnology News

"Top 10 Public Gene Editing Company"

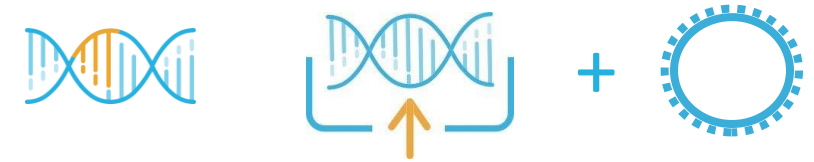
POSEIDA THERAPEUTICS

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

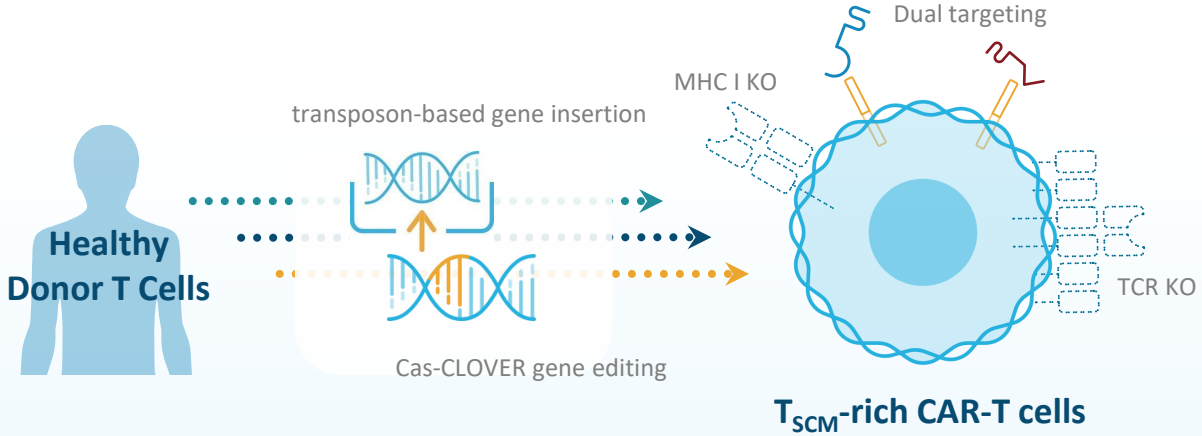


Cas-CLOVER Gene Editing

Transposon-based DNA insertion

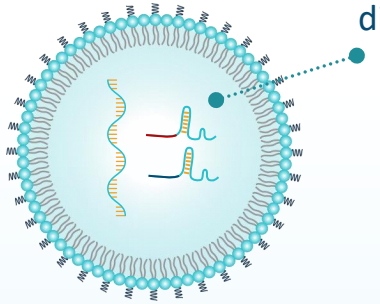
Enabling technologies

ALLOGENEIC CAR-T

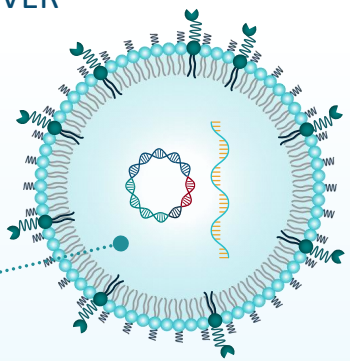


T_{SCM}-rich CAR-T cells

NON-VIRAL GENETIC MEDICINES



Non-viral, in vivo editing of disease-relevant gene using Cas-CLOVER



Whole gene insertion via non-viral transposon for functional correction

POSEIDA THERAPEUTICS

Poseida manufactures GMP allogeneic CAR-T in house for high yields and low COGS

Facility supports three current allogeneic programs while simultaneously advancing our platform

POSEIDA'S ALLOGENEIC VS. AUTOLOGOUS PLANT

- **~1/10 facility size for comparable output[1]**
- **Far lower labor and operating costs[2]**
- **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

1. Assuming autologous facility size is 150,000 sq. ft.
2. Assumes an autologous facility workforce requires at least 900-1200 people
COGS, cost of goods sold

POSEIDA THERAPEUTICS

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

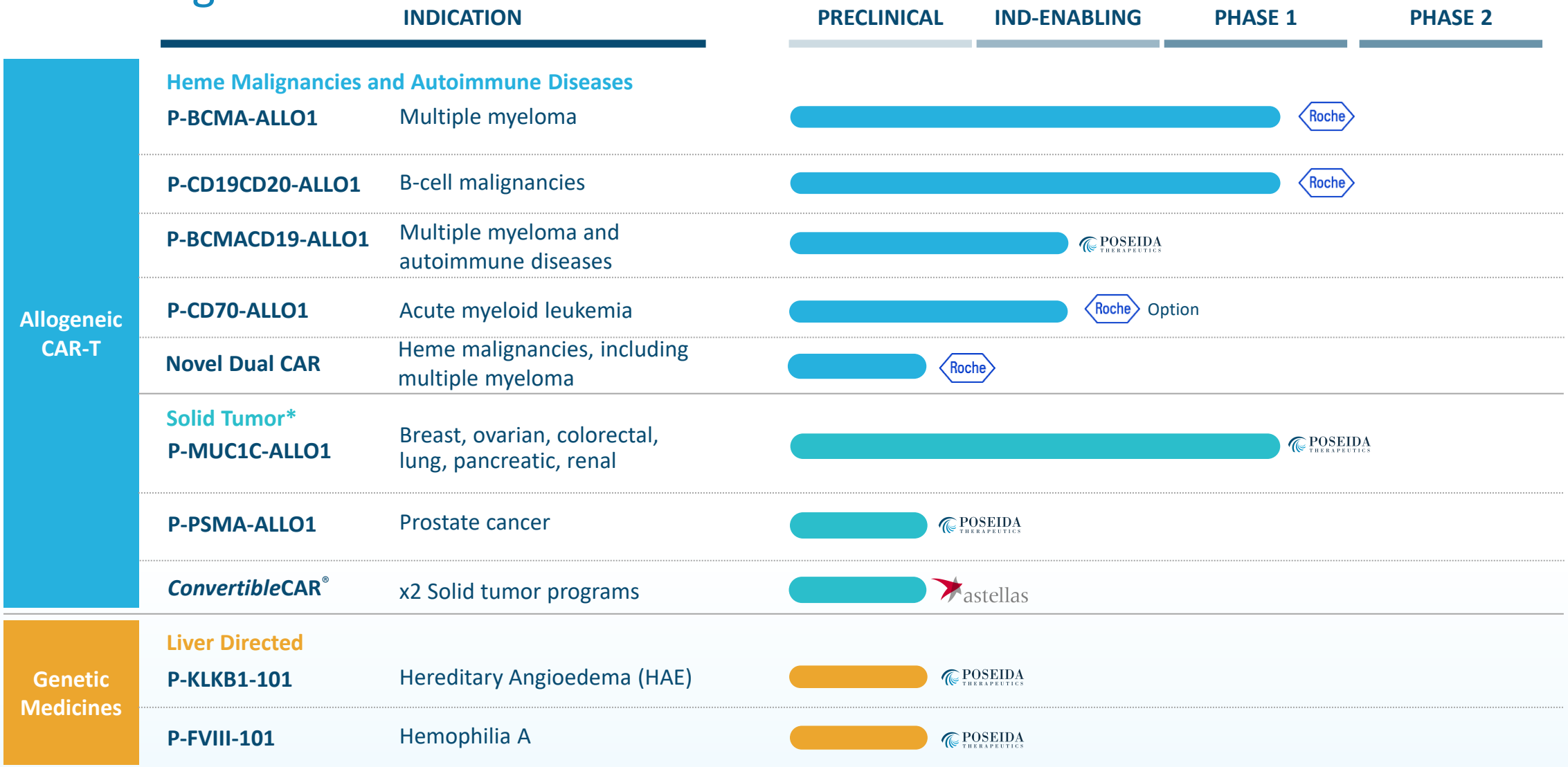
- Deal worth up to **$6 billion** in aggregate value, plus royalties
- Currently **three heme malignancy** collaboration programs
- **$80 million** in milestone payments earned to date in 2024

- **$50 million** upfront plus up to **$550 million**, plus royalties
- Combines Poseida allogeneic platform with Astellas technology for up to two **'convertible CARs' 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 THERAPEUTICS

Our robust pipeline spans partnered and wholly owned allogeneic CAR-T and non-viral genetic medicines



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

POSEIDA THERAPEUTICS

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ALLOGENEIC CAR-T

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UNMATCHED PLATFORM

Innovating with powerful, proprietary, and differentiated genetic engineering technologies

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

POSEIDA'S VISION:

Our T_{SCM}-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_{SCM}-rich CAR-T approach**

Fully proprietary genetic engineering toolkit designed for T_{SCM}-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

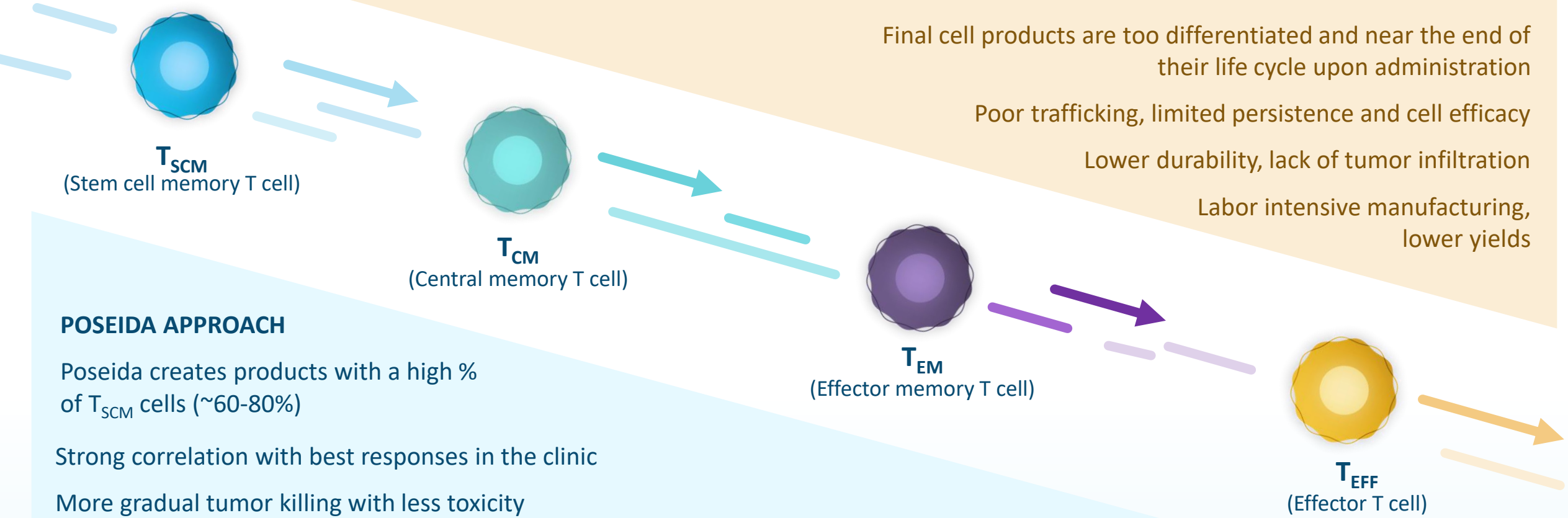
Poseida has built the full set of capabilities needed for success in allogeneic cell therapy

	OTHERS	POSEIDA SYSTEM	POSEIDA ADVANTAGE
CELL TYPE	• Differentiated T cells • Variety of other immune cell types	• T stem cell memory cells (T_{SCM})	• **Product profile unique in 'stemness'** • **Expected better safety** • **Persistent, self-renewing cells**
GENE INSERTION (add CAR)	• Viruses (single-gene capacity)	• Nonviral transposon (multigene capacity)	• **Safety** • **Product purity** • **Multi-CAR products** • **Maintains T_{SCM} type**
GENE EDITING (for alloreactivity)	• Older technologies with lower fidelity*	• Cas-CLOVER, high-fidelity	• **Safety, quality** • **Maintains T_{SCM} type**
SCALABLE MANUFACTURING	• Often outsourced • Challenging to reach high yields	• Wholly-owned onsite GMP facility • Booster molecule-enabled yield	• **Proven CMC capability (up to 100 dose/batch yields)** • **Scalable, lower cost**

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

POSEIDA THERAPEUTICS

Stem cell memory T cells (T_{SCM}) fundamentally differentiate Poseida's approach



OTHER APPROACHES

Final cell products are too differentiated and near the end of their life cycle upon administration

Poor trafficking, limited persistence and cell efficacy

Lower durability, lack of tumor infiltration

Labor intensive manufacturing, lower yields

POSEIDA APPROACH

Poseida creates products with a high % of T_{SCM} cells (~60-80%)

Strong correlation with best responses in the clinic

More gradual tumor killing with less toxicity

Better duration of response and potential for re-response - T_{SCM} engrafts and persists in bone marrow

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 tools designed to work together as a system

T_{SCM} correlates with depth and durability of response

GVH, graft-versus-host; HVG, host-versus-graft

POSEIDA THERAPEUTICS

Poseida transposon enables tremendous functionality for allogeneic CAR-T cell therapies

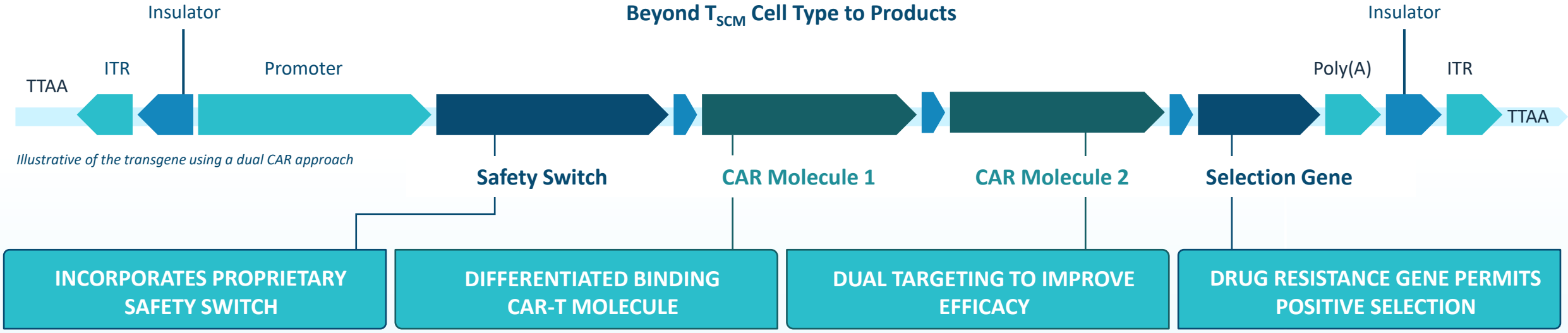
Transposon

Non-viral gene insertion system 1

Effective <u>non-viral</u> system that inserts one or more genes in a single step to deliver a T_{SCM}-rich cell therapy product

- Preferentially transposes naïve and stem cell memory T cells ✓
- Large cargo capacity can deliver one or more CARs ✓
- Works well in resting T cells to preserve T_{SCM} phenotype ✓
- Stable DNA integration in a wide variety of cell types ✓

Transposon "Cartridge" Designed to Include Elements that Add Further Differentiation Beyond T_{SCM} Cell Type to Products



Illustrative of the transgene using a dual CAR approach

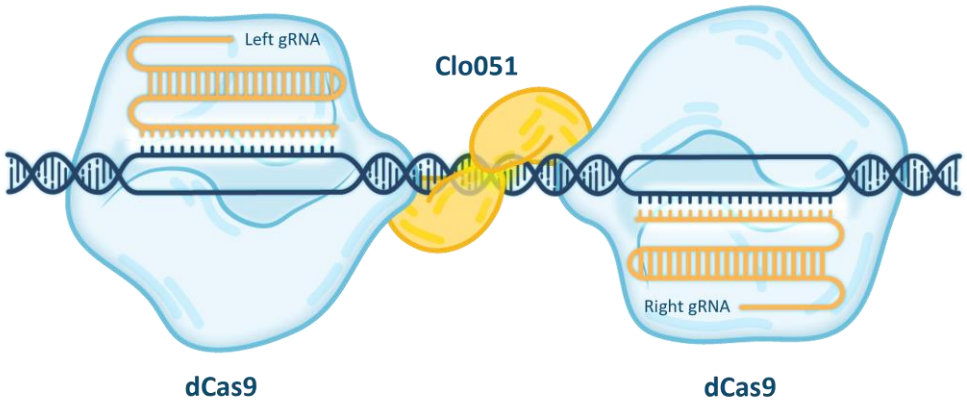
- **INCORPORATES PROPRIETARY SAFETY SWITCH**
- **DIFFERENTIATED BINDING CAR-T MOLECULE**
- **DUAL TARGETING TO IMPROVE EFFICACY**
- **DRUG RESISTANCE GENE PERMITS POSITIVE SELECTION**

POSEIDA THERAPEUTICS

Poseida's Cas-CLOVER addresses alloreactivity in allogeneic CAR-T while preserving product stemness

Cas-CLOVER

Gene editing system 2



HIGH-FIDELITY, DESIGNED FOR LITTLE TO NO OFF-TARGET CUTTING

- Utilizes deactivated Cas9 (dCas9) as a binding protein with gRNA
- dCas9 guides a fused nuclease domain from the Clo051 enzyme, which only cuts DNA when bound to its matching pair
- Edits in current clinical-stage CAR-T include TCR and B2M (MHC I) knockouts

ADVANTAGES OF CAS-CLOVER[1-15]

- **Stemness:** unique ability to edit resting T cells yields high levels (60-80%) of T_{SCM}
- **Safety:** ~25-fold greater fidelity than CRISPR-Cas9 reduces risk for off-target edits
- **Efficiency:** multiplexing potential for multiple edits in a single efficient step; lower cost vs. older technologies

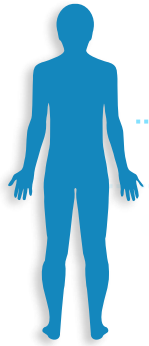
1. Madison et al., *Mol Ther Nucleic Acids*. 2022; 2. Alvarez et al., *Mol Ther.* 31(4), Supp. 1, S1-794. 2023. 3. Data on file, Manuscript in preparation (Poseida Therapeutics) 4. Gilmore et al., *NEJM* 2021; 5. Longhurst et al., *NEJM* 2024; 6. Ren et al., *Clin Cancer Res*., 2017; 7. Antoniani et 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. Poseida R&D Day, April 17, 2024; 15. Alvarez et al., *Mol Ther.* 2023.
B2M, beta-2 microglobulin; TCR, T-cell receptor

POSEIDA THERAPEUTICS

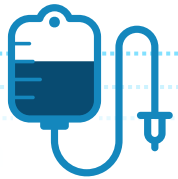
Poseida's manufacturing platform, used across all products, delivers T_{SCM}-rich products with high purity

P-BCMA-ALLO1 example

Allogeneic manufacturing process enhanced with Booster Molecule technology to deliver high yields



ONE HEALTHY DONOR



ONE LEUKOPAK

Manufacturing

T Cell Isolation

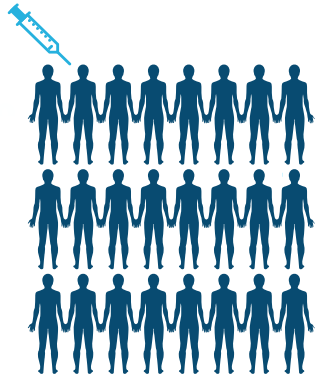
Non-Viral Gene Editing

CAR-T Cell Selection and Expansion

Purification

Fill/finish

Storage in Inventory



~100 DOSES

- Production process preserves T_{SCM} phenotype
- Nearly all CAR-carrying cells
- "On demand" delivery to site of care

P-BCMA-ALLO1 interim Phase 1 study data presented at IMS 2024 illustrates our manufacturing capability, using product from 7 manufacturing lots and 6 different qualified donors

IMS 2024, the 21st International Myeloma Society (IMS) Annual Meeting in Rio de Janeiro.
Poseida Data on File.

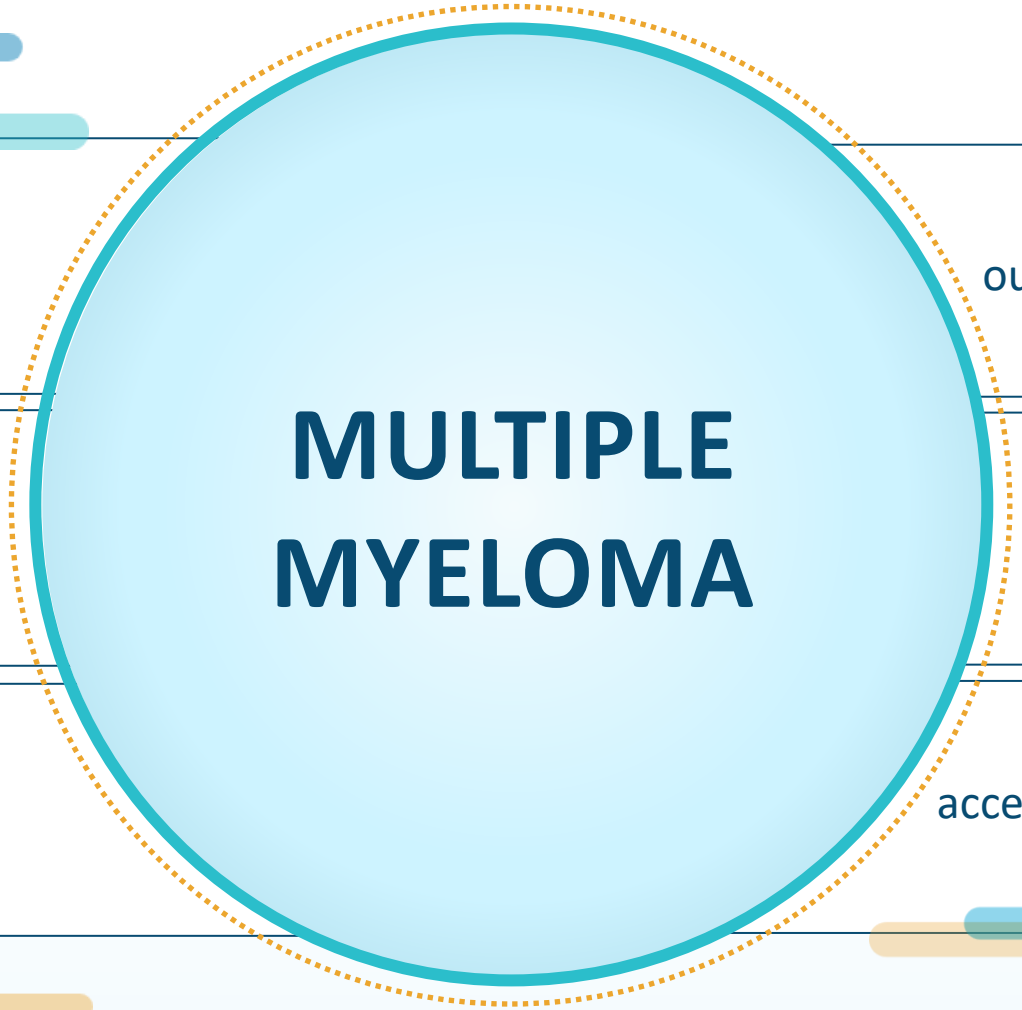
POSEIDA THERAPEUTICS

P-BCMA-ALLO1: one of the most advanced allogeneic CAR-Ts in clinical development for multiple myeloma

Common and incurable blood cancer, with ~12,500 estimated U.S. deaths in 2024[1]

~179,000 people living with myeloma in the U.S., treated across multiple lines of therapy[1]

Large market, ~**$23B**[2] **global, U.S. ~$14B**[2], projected to grow at 9-10% annually[2]



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**[2]

1. SEER, American Cancer Society. 2. EvaluatePharma – 2024 projections for Global / US sales. CAGR calculated based on 2024-2036 sales projections. ClearView Healthcare Partners Analysis.

POSEIDA THERAPEUTICS

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

AUTOLOGOUS PATIENT JOURNEY

TREATMENT DECISION

WEEKS to MONTHS

PATIENT RESPONSE

SCHEDULE PATIENT FOR APHERESIS (4-8 HRS)

POTENTIAL NEED FOR RE-APHERESIS

BRIDGING THERAPY

PATIENT CELL PROCESSING

SHIPMENT

TREATMENT INITIATION

30 DAYS AFTER INFUSION[1]

MONTHS

TIME TO CLINICAL BENEFIT

ALLOGENEIC PATIENT JOURNEY

Based on Poseida Clinical Trial Experience

TREATMENT DECISION

HEALTHY DONOR PRODUCT SHIPPED

PATIENT RESPONSE

TREATMENT INITIATION 1 DAY

16 DAYS[2] AFTER INFUSION

~3.5*

WEEKS

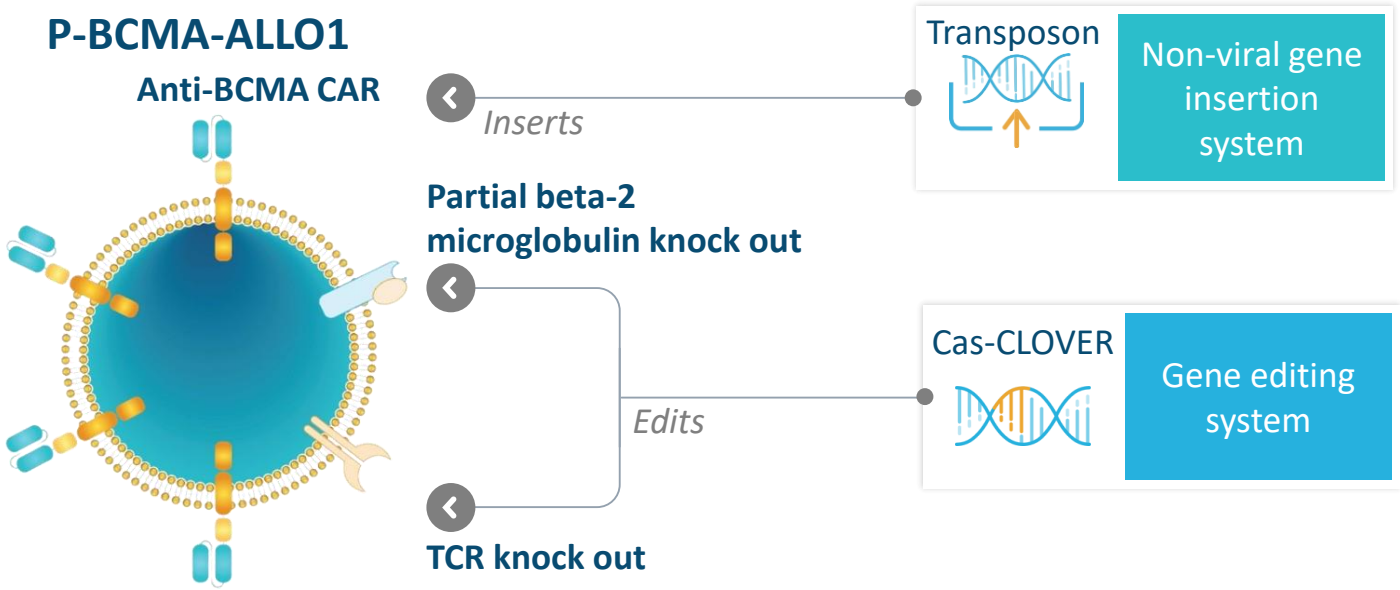
TIME TO CLINICAL BENEFIT

Source: Adapted from Elverum K, Whitman et al. Gene Therapy. April 2019. 1. Carvykti [package insert] - median time to first response was 1 month. *Based on interim data from Phase 1 P-BCMA-ALLO1 clinical trial announced in September 2024, Arms A and B.

POSEIDA THERAPEUTICS

T_{SCM}-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

P-BCMA-ALLO1 Key Features



Overview and Status

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

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

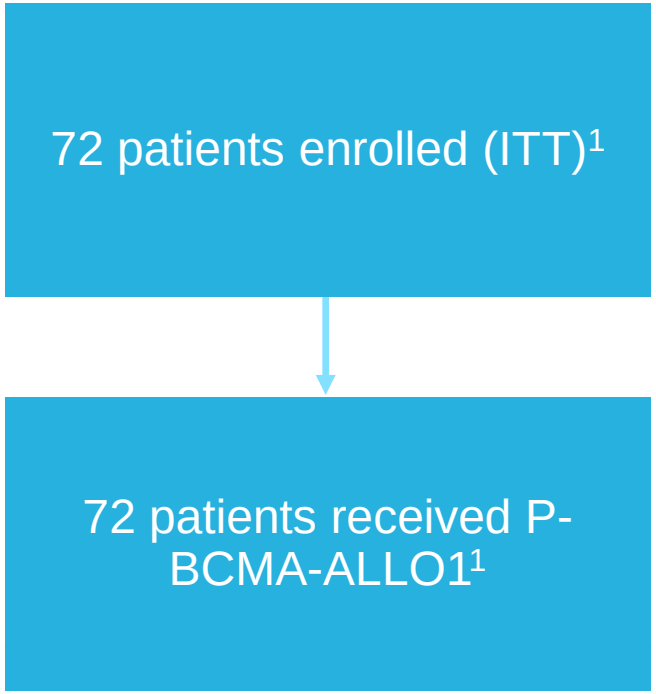
FDA

Regenerative Medicine Advanced Therapy (RMAT) designation for relapsed/refractory multiple myeloma[1]

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

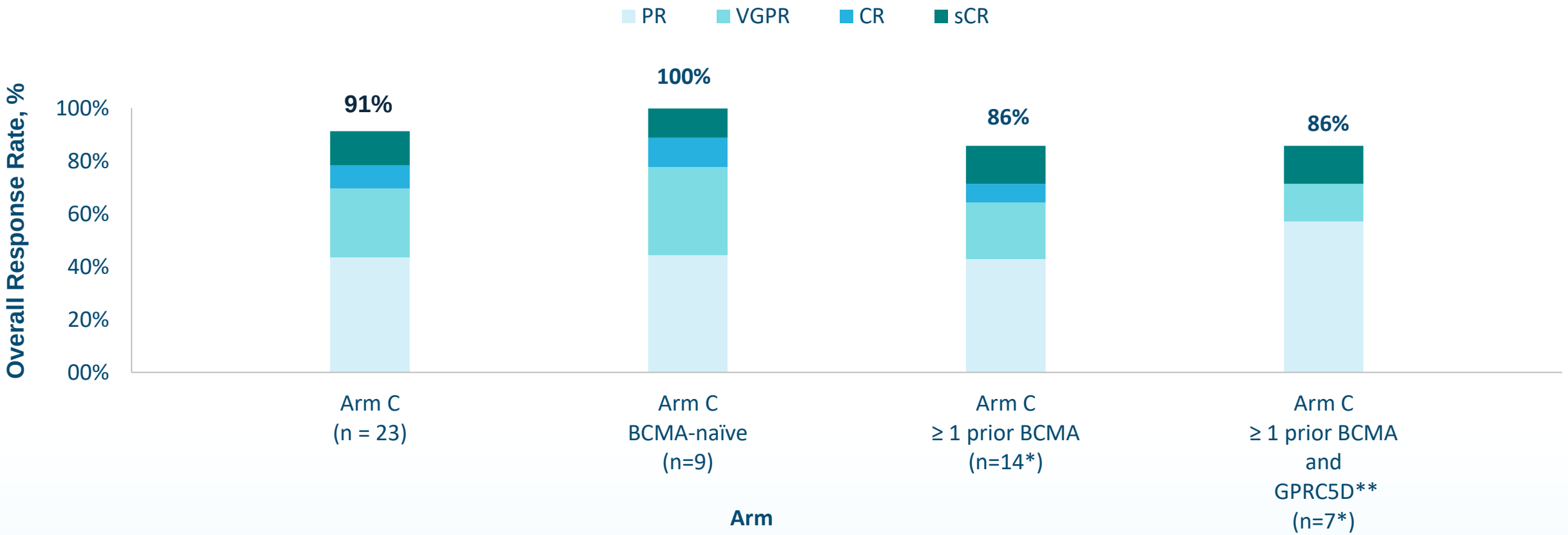
IMS 2024: Entire intent-to-treat (ITT) patient population treated quickly without apheresis or bridging therapies



- **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[2]
- Patients were heavily pretreated with median 6 lines of therapy, maximum of 22
  - 43% - previous BCMA therapy/talquetamab and 69% - high-risk cytogenetics

[1] 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 6th 2024 for efficacy analysis.
[2] N=72, analysis excludes patient retreated with P-BCMA-ALLO1.
ITT, intent to treat

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



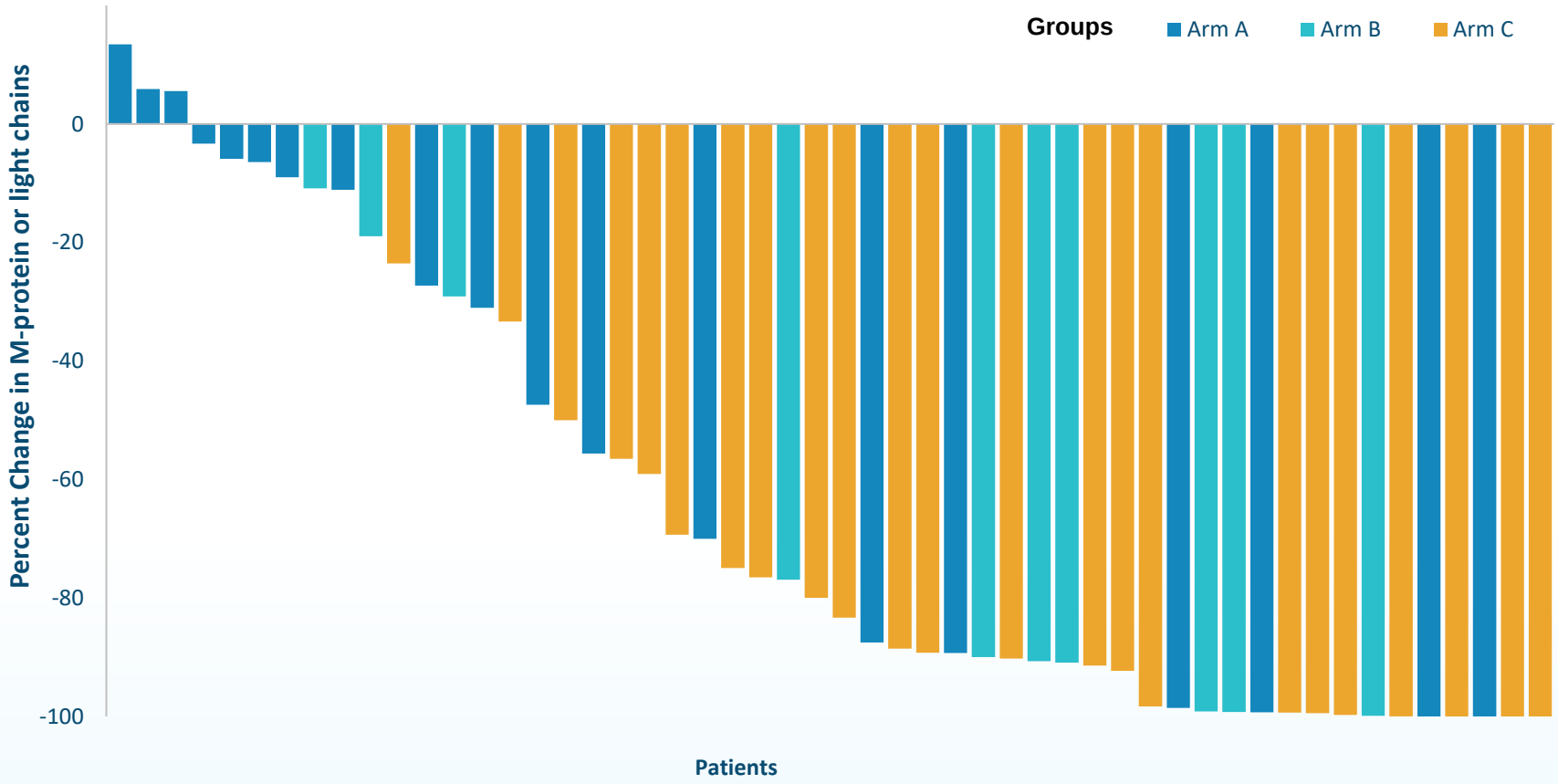
ORR= sCR, CR, VGPR or PR, including confirmed and unconfirmed responses. Evaluable patients: Obtained first response assessment by IMWG m-protein criteria or PD/death and completed Week 4 visit. Arm: C = LD – cy 750 mg/m^2, flu 30mg/m^2. All dosed Cohort 2 = Range 2.0 to < 6.0 × 10^6 cells/kg. Note: 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

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

Percent Change by Subject, Color-Coded by Group[a]



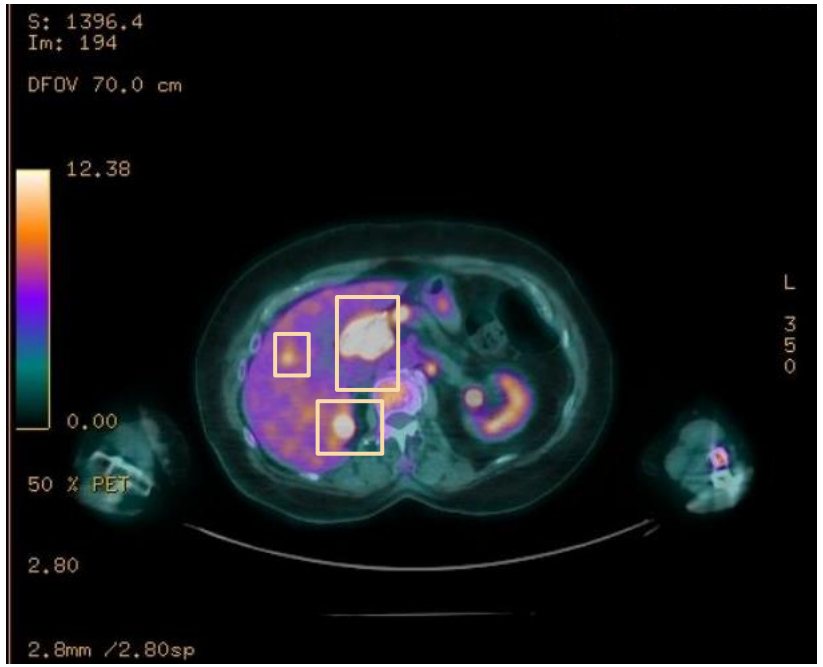
[a] The % change on Y axis is based on the myeloma parameter that was measurable at baseline and is used to determine response on each subject over time, such as SPEP, UPEP or FLC.
MTTR: median time to response; mDOR: median duration of response; SPEP, serum protein electrophoresis; UPEP, urine protein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

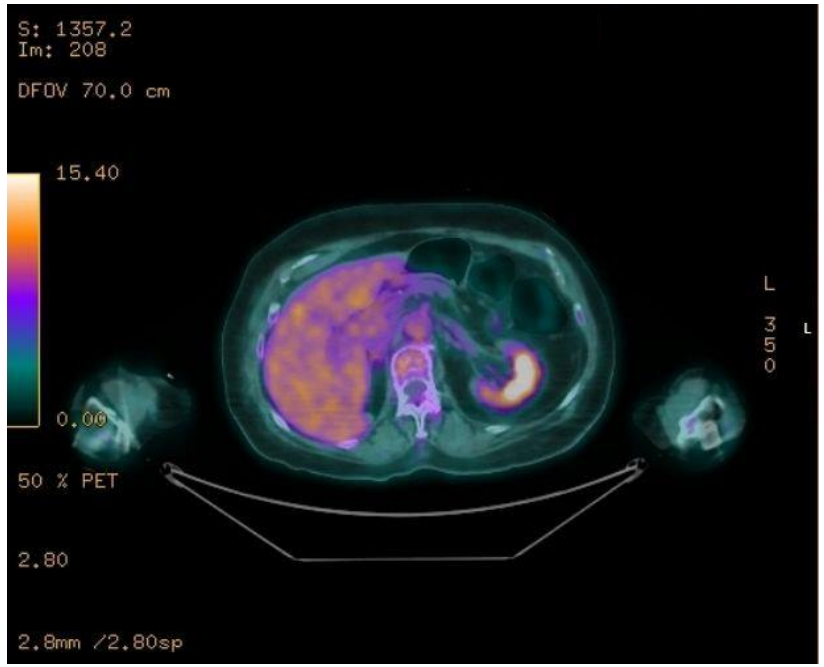
Patient Case #1: Dramatic resolution of disease in breast, liver and lymph nodes, with marrow clearance

Patient demographics		
Age	**Sex**	**Race**
71	Female	White

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

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

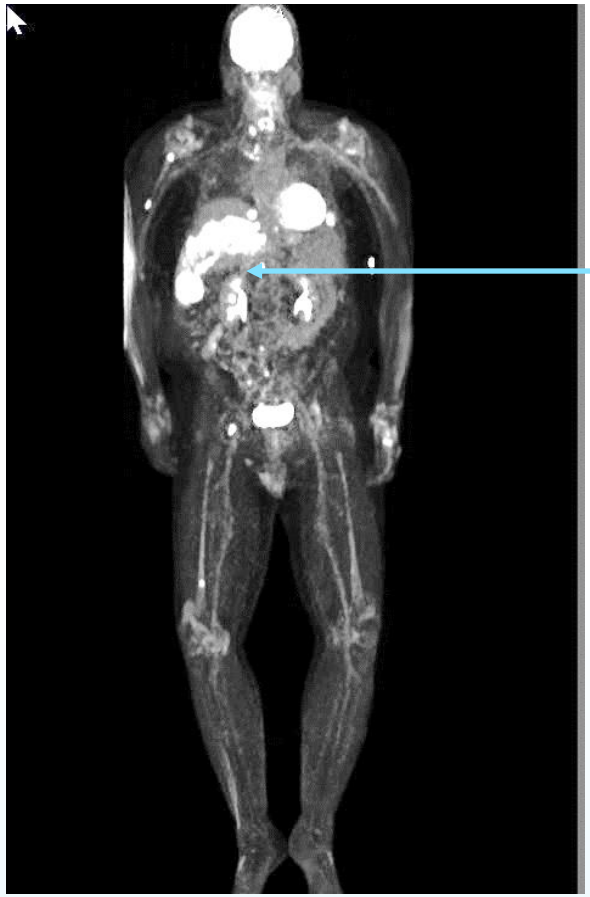
Patient Case #2: Rapid, deep response observed in a heavily pretreated patient, refractory to teclistamab

Patient demographics		
Age	**Sex**	**Race**
59	Male	White

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

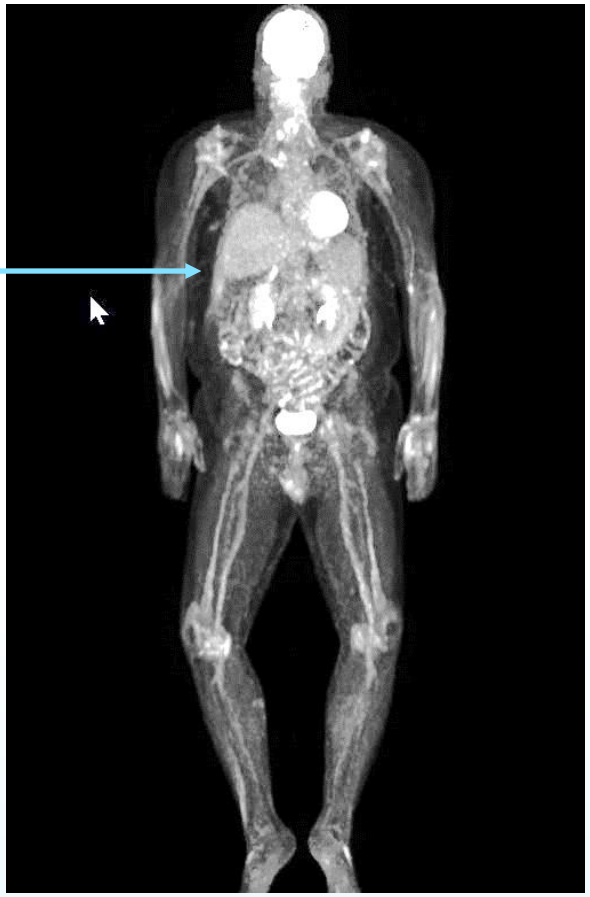
Baseline PET-CT » **D28 PET-CT**

Pre-treatment



Resolution of R pleural disease, Ongoing PR at M3

Post-treatment



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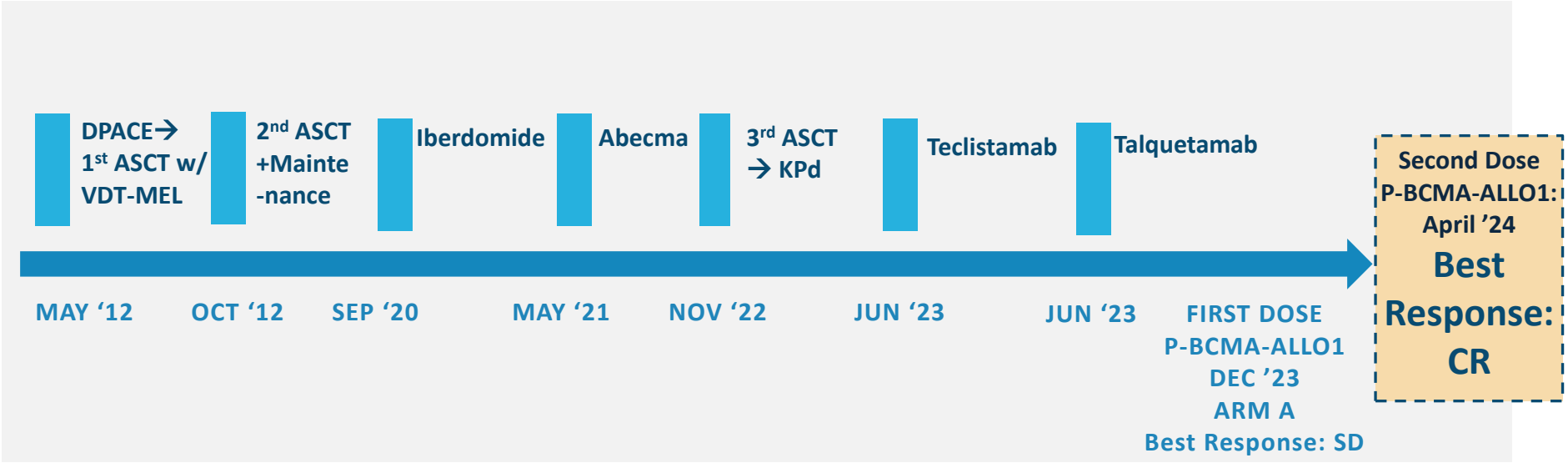
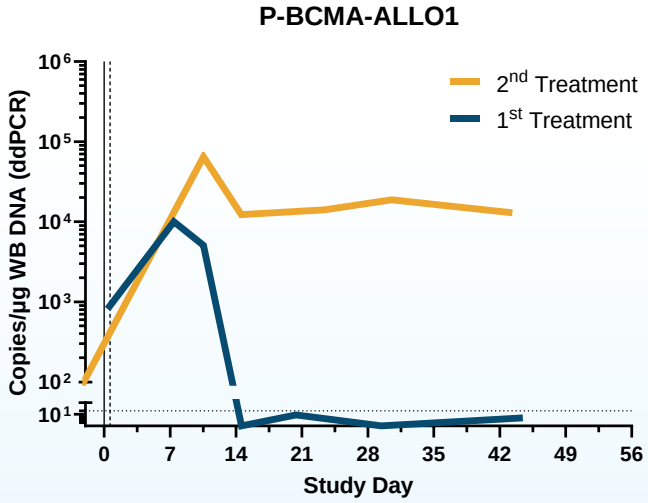
Patient Case #3: Complete response observed in heavily pretreated patient (20 prior lines of therapy), who was also one of a few retreated patients

Patient demographics		
Age	**Sex**	**Race**
73	Female	White

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



Cellular Kinetics



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

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

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

[1] interim data as of September 6, 2024.[4]Munshi et al.; [6]Berdeja et al.; [7]Martin et al. (2023).

POSEIDA THERAPEUTICS

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

	KarMMa[4]	Cartitude-1[6]	MajesTEC-1[7]	P-BCMA-ALLO1 all patients	P-BCMA-ALLO1 arm C[1]
	N=128	N=97	N=165	**N=72**	**N=21**
Age group ≥ 65, # (%)	45 (35%)	35 (36%)	24 (15%) (age ≥ 75)	**43 (60%)**	**10 (48%)**
Minority patient representation	NA	20 (21%)	31 (19%)	**24 (33%)**	**8 (38%)**
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Previous ASCT	120 (94%)	87 (90%)	135 (81%)	**42 (58%)**	**14 (67%)**
1 prior anti-BCMA/GPRC5D	0	0	0	**31 (43%)**	**13 (62%)**
Multiple prior BCMA/GPRC5D	0	0	0	**15 (21%)**	**8 (38%)**
Bridging Therapy, # (%)	112 (88%)	73 (75%)	NA	**0 (0%)**	**0 (0%)**

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

[1] interim data as of September 6, 2024.[4]Munshi et al.; [6]Berdeja et al.; [7]Martin et al. (2023).

POSEIDA THERAPEUTICS

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

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

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

[1] interim data as of September 6, 2024.[4]Munshi et al.; [6]Berdeja et al.; [7]Martin et al. (2023).

POSEIDA THERAPEUTICS

IMS 2024: P-BCMA-ALLO1 early efficacy results are competitive with marketed 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)[1]	ABECMA (ITT)	CARVYKTI (received CAR-T)[2]	CARVYKTI (ITT)	TECVAYLI (ITT)[3]	P-BCMA-ALLO1 (ARM C)
Patients	N=100	N=135	N=97	N=113	N=110	N=23
ORR	72%	**53%**	98%	**84%**	**62%**	**91%**
sCR + CR	28%	21%	80%	69%	28%	22%**
VGPR+	53%	**39%**	94%	**81%**	**57%**	**48%****

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

*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

1. Abecma [package insert]. Summit, NJ: Celgene Corporation; 2024; 2. Carvykti [package insert]. Horsham, PA: Janssen Biotech; 2024; 3. Tecvayli [package insert]. Horsham, PA: Janssen Biotech; 2022.

POSEIDA THERAPEUTICS

IMS 2024: P-BCMA-ALLO1 has also shown differentiated safety results*

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

P-BCMA-ALLO1 had 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

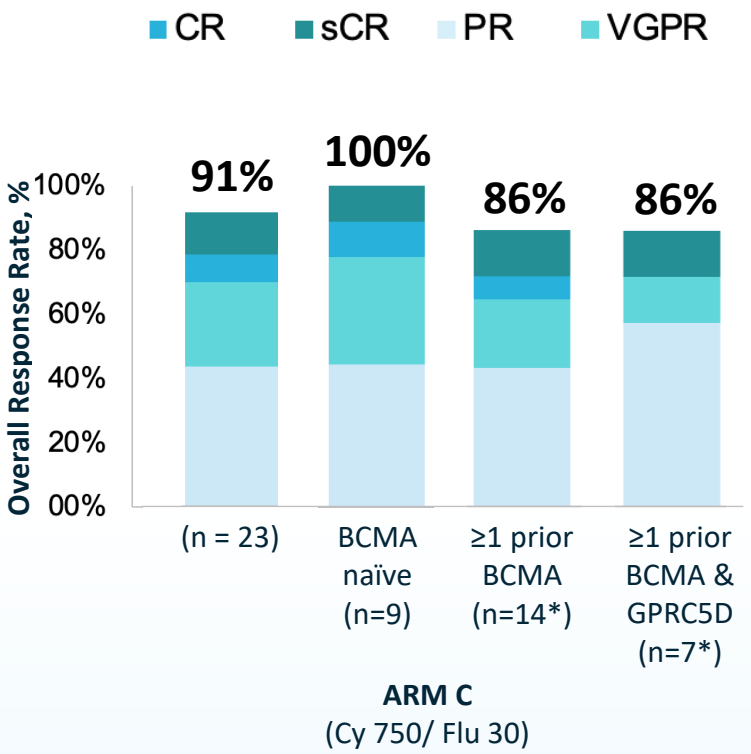
*No head-to-head trial has been conducted evaluating P-BCMA-ALLO1 against other products included herein. Cross-trial data interpretation should be considered with caution as it is limited by differences in study population, study design, and other factors.

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.

POSEIDA THERAPEUTICS

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[1]



Compelling Emerging Safety Results[2]

- 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

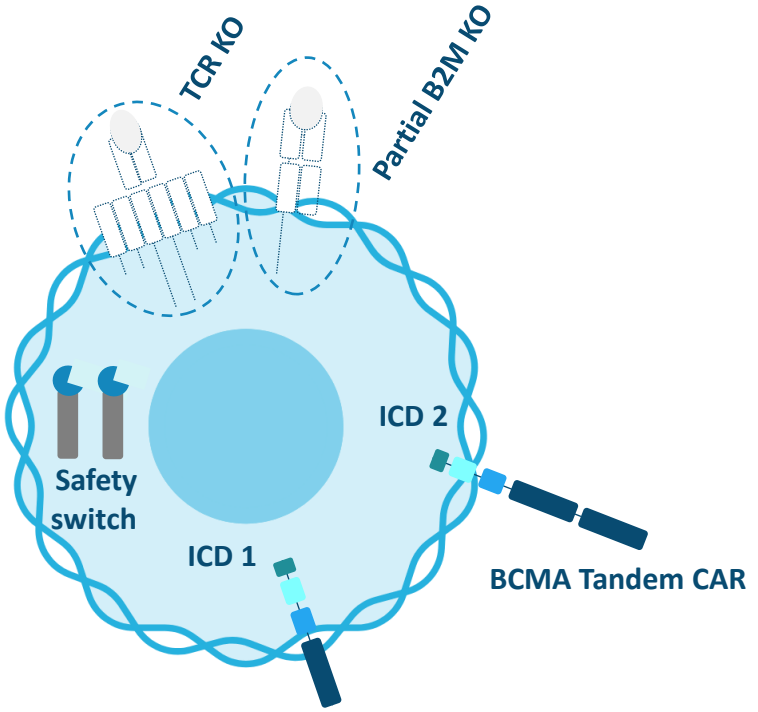
- 100% of ITT population underwent LD and received P-BCMA-ALLO1
- Outpatient optionality
- Treatment of all patients with in-spec product
- **No** waiting…
  - **No** invasive patient apheresis
  - **No** anti-myeloma bridging therapy
- Available on-demand from manufactured inventory

**talquetamab, a GPRC5D bispecific T cell engager
* Includes 1 retreatment subject

[1] Interim data as of September 6, 2024. [2]Interim data as of July 31, 2024

POSEIDA THERAPEUTICS

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_{SCM}-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

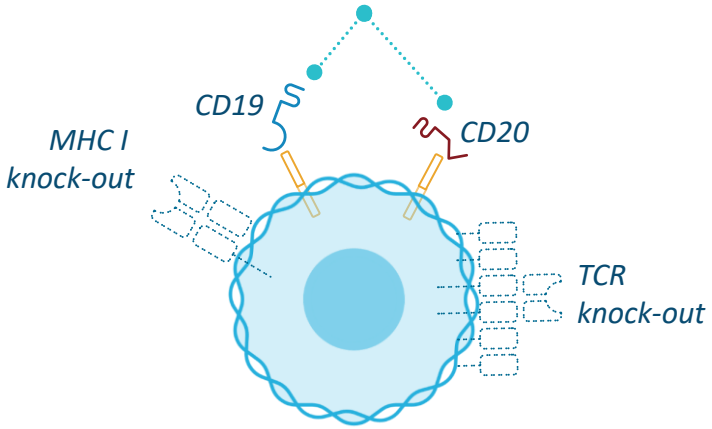
B2M, beta-2 microglobulin; ICD, intracellular domain; NHL, Non-Hodgkin lymphoma

POSEIDA THERAPEUTICS

Further pipeline data updates planned for 2H24

P-CD19CD20-ALLO1

Differentiated, carrying 2 full length CARs and other Poseida platform elements[1]

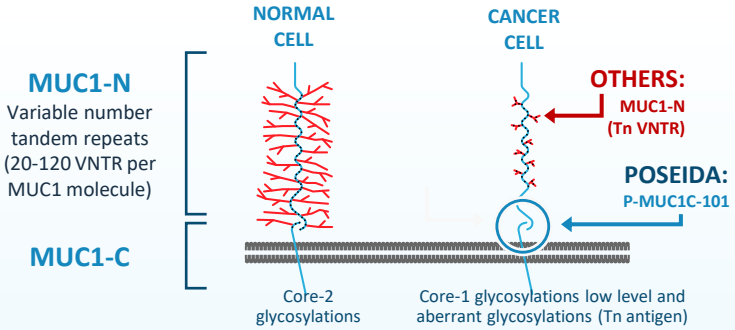


- Post CAR-T relapse remains a common problem in B-cell malignancies
- Early autologous CD19/CD20 CAR-T data suggests dual targeting can be effective

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

Roche

P-MUC1C-ALLO1



- Unique approach to targeting MUC1C protein at tumor specific moiety
- Also carries Poseida's platform[1] elements
- Growing body of evidence demonstrating potential treatment effect

Clinical data update planned for ESMO-IO 2024

*Subject to coordination with Roche
1. Safety switch, selectable marker, TCR KO, β2M KO

POSEIDA THERAPEUTICS

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

Roche

astellas

MOST LOVED WORKPLACE® Certified 2024

GENETIC MEDICINES

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

GEN Genetic Engineering & Biotechnology News

"Top 10 Public Gene Editing Company"

UNMATCHED PLATFORM

Innovating with powerful, proprietary, and differentiated genetic engineering technologies

Poseida's vision for genetic medicine

Provide patients with corrective, transformational therapeutic benefit through medicines that insert, delete, or modify genes

Effective – capacity to cure*

Safe – non-viral, low immunogenicity lipid nanoparticles

Durable – stable genome editing/insertion

Patient-friendly – single or short course of treatment

Scalable – can be produced at scale and cost-effectively

Broad applicability – treat patients of all types & ages

Versatile – insert genes of any size, remove genes or signals, across cell types

*By inserting, deleting or modifying genes

POSEIDA THERAPEUTICS

Our non-viral nanoparticle delivery technology is poised to unlock the potential of genetic medicine

Why non-viral?

Delivery of gene-size DNA

- Cargo capacity enables delivery of one or more genes to address all patient mutations

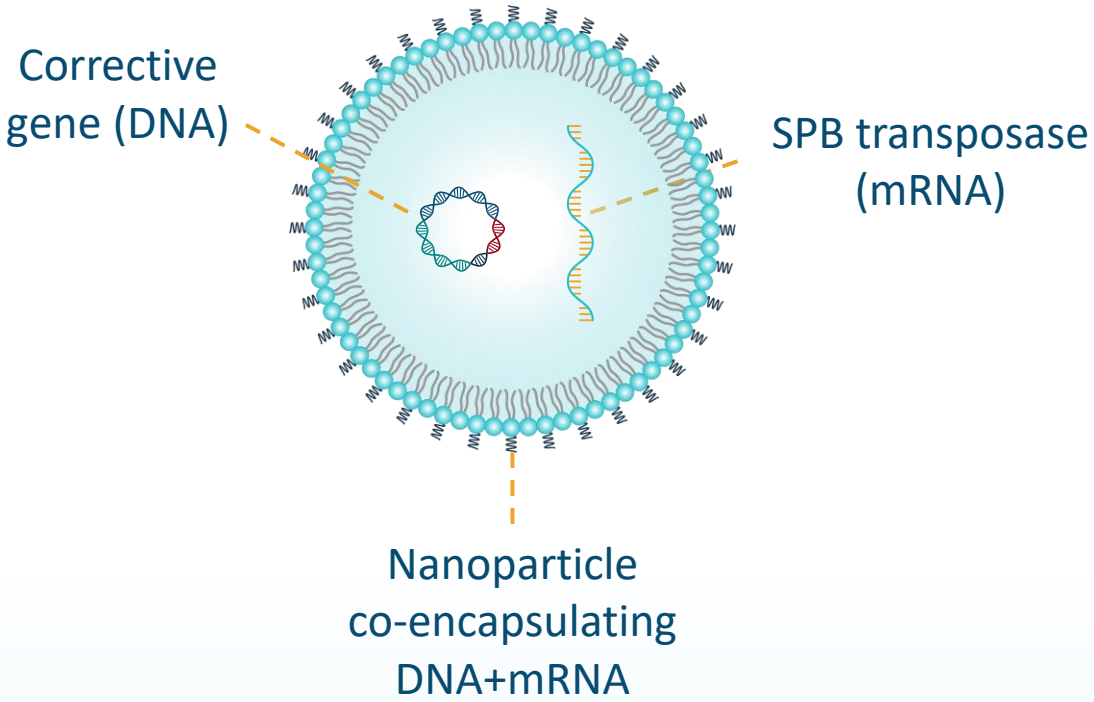
Safety / Efficacy

- Non-immunogenic enables repeated titrate-to-efficacy dosing

Manufacturability

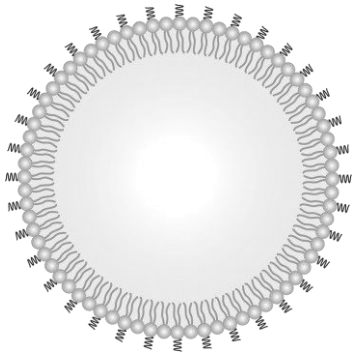
- Platform built on chemistry, rather than biology, offers CMC advantages

Nanoparticle drug product



Versatility in developing products tailored to therapeutic need

Potential to add proprietary innovation elements onto core technology components



Lipid nanoparticle

Core technology suite

Optimized insertion ± **High-fidelity editing** ± **Proprietary lipid library**

Innovation elements

Safety

- Targeting construct
- Armoring

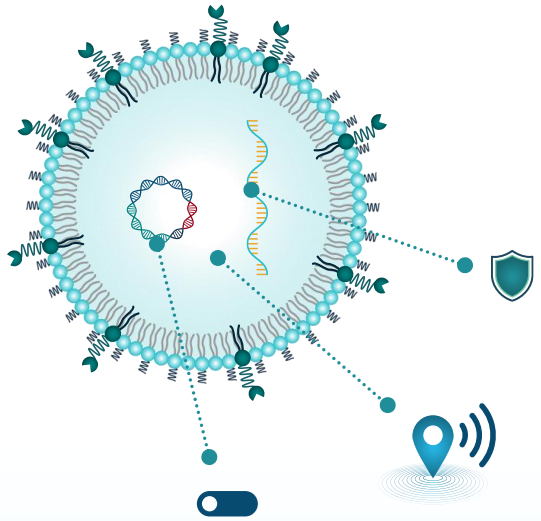
Activity

- Intracellular trafficking agent

Options

- Modulator switch
- Nuclear trafficking

Product candidate

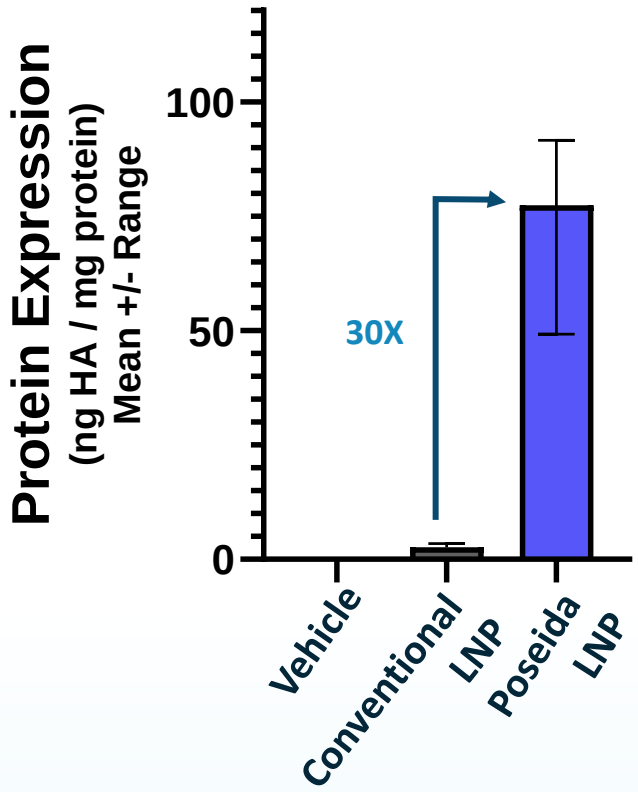


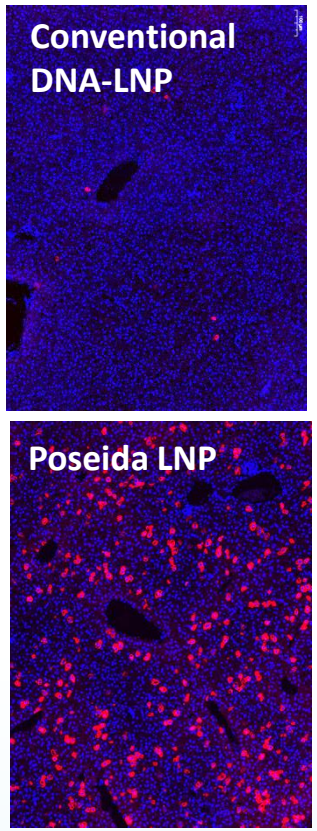
POSEIDA THERAPEUTICS

Delivery: Non-viral LNP technology enables broad hepatocyte DNA delivery

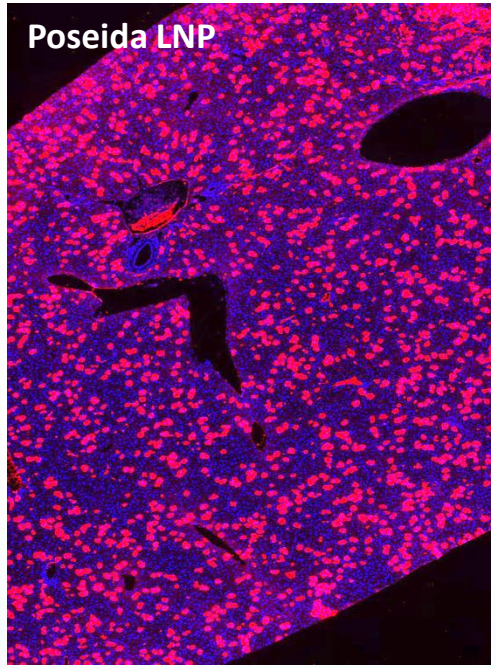
Technology advancements enabling Poseida as a leader in non-viral gene delivery

PCCA (propionic acidemia)

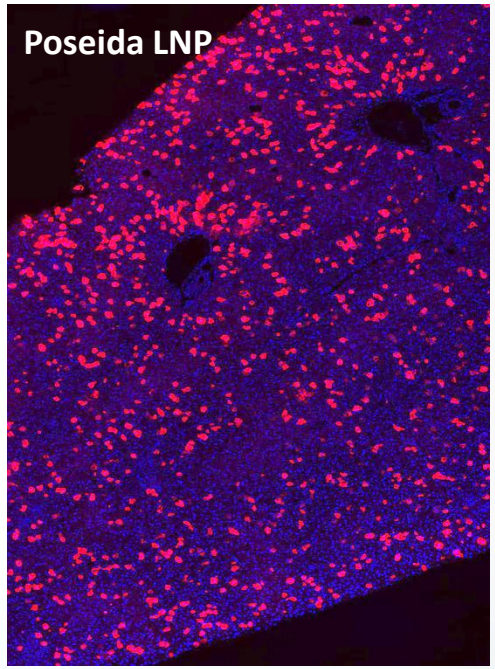




Arginase Deficiency (ARG1)



Phenylketonuria (PAH)

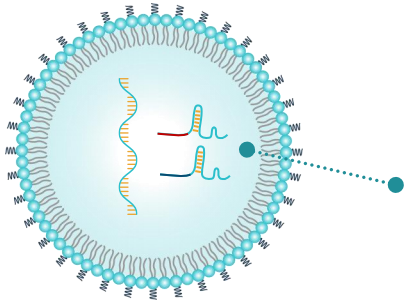


Juvenile immunocompetent mice single dose of LNP intravenously; immunostaining for transgene protein (pink).

Poseida LNP can deliver both DNA and RNA

Focused development of key non viral programs within areas of significant opportunity

P-KLKB1-101: Hereditary Angioedema

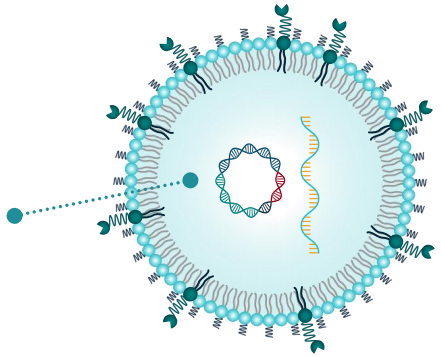


Non-viral Cas-CLOVER editing of disease-relevant gene

- Rare, inherited disorder resulting in swelling in limbs, face, intestinal tract and airways
- ~6,000[1] people with HAE in the U.S., with estimated $2.6B and growing[2] market

P-FVIII-101: Hemophilia A

Non-viral whole gene insertion for functional correction



- Hereditary disorder resulting in excessive bleeding either spontaneously or due to trauma
- ~30,000[3] people with hemophilia in the U.S., with estimated $7.6B and growing[4] market

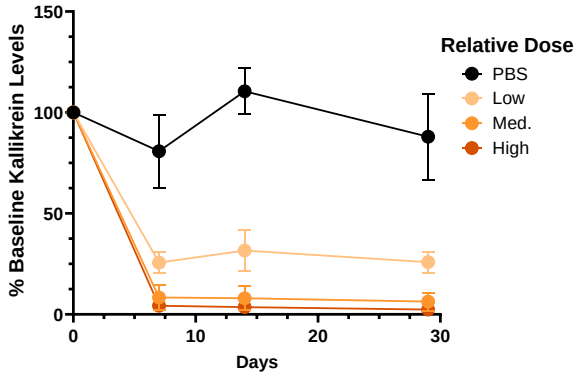
1. NIH HAE Epidemiology https://pubmed.ncbi.nlm.nih.gov/21549036/ 2. Evaluate Pharma, 2022 estimate
3. hemophilia.org 4. Clarivate, 2024 estimate.

POSEIDA THERAPEUTICS

Stable targeted reduction of HAE biomarker with KLKB1 gene editing

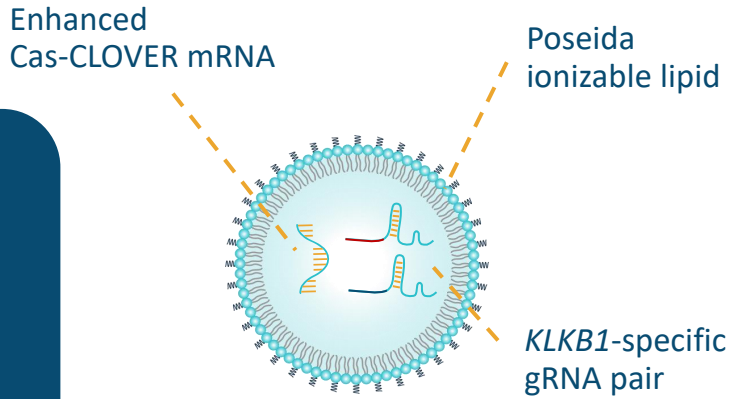
Dose-responsive reduction with candidate LNP exceeds performance target in mice

Plasma kallikrein reduction



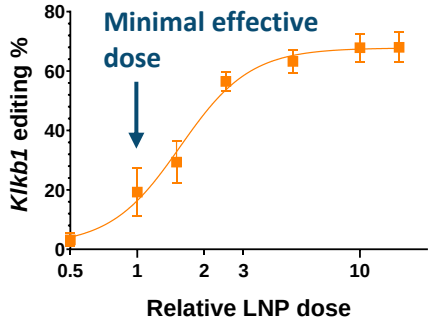
Lead LNP candidate yields target reduction:

- Target kallikrein reduction of 30-60%
- Maintenance of plasma kallikrein depletion

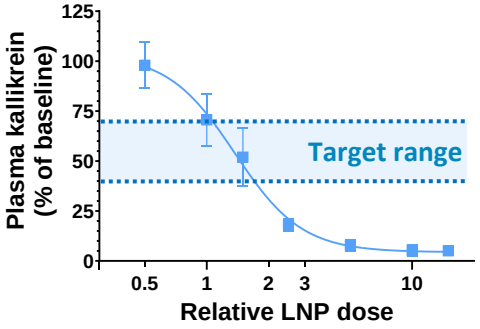


- Wide effective dose range provides opportunity for titrating doses
- Candidate yields controlled dose-dependent reduction in targeted kallikrein protein

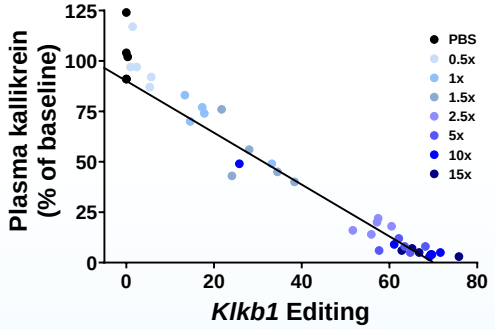
Liver *KLKB1* editing



Plasma kallikrein levels



Editing vs. kallikrein levels



Interim non-human primate (NHP) data demonstrate favorable tolerability & liver editing approaching desired therapeutic range

Hemophilia A: where we are today and where we need to be

Courtesy/view of Dr. Steven Pipe

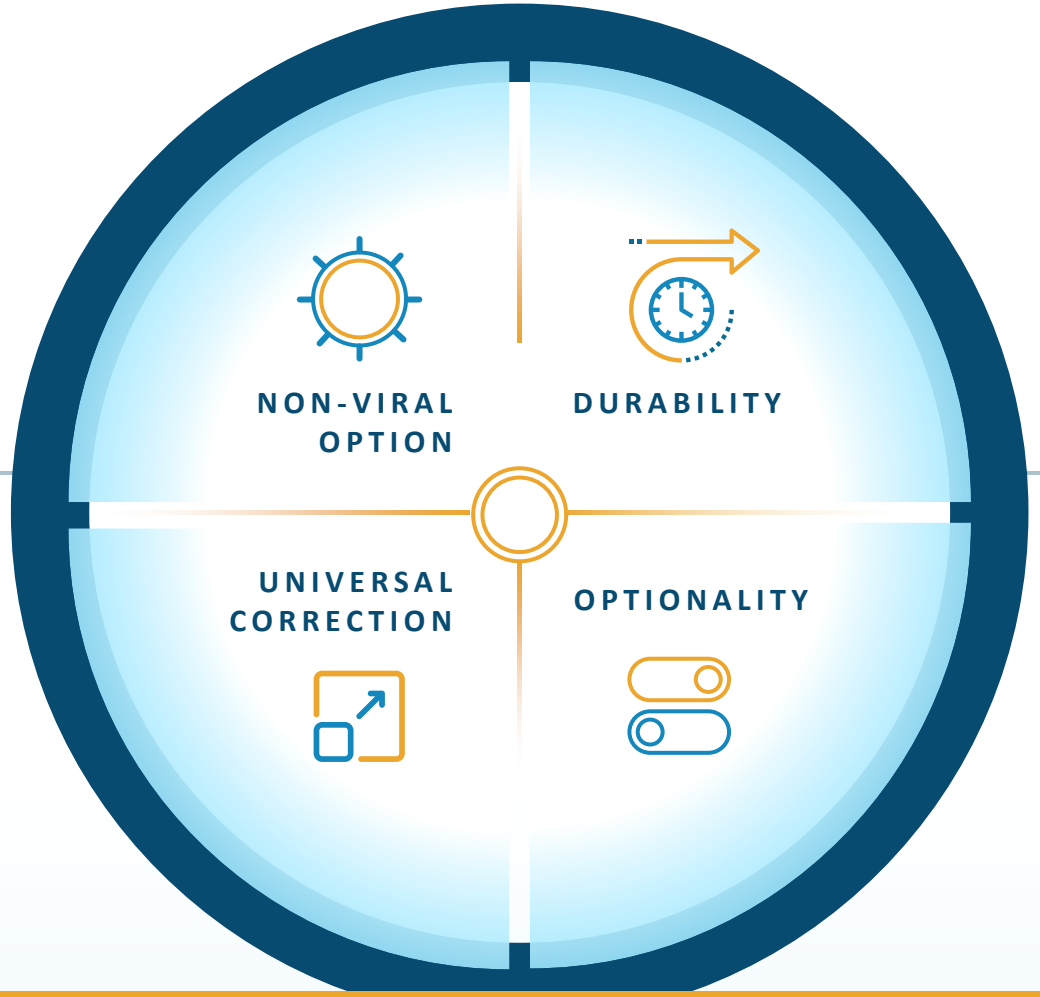
CURRENT GENE THERAPY	IDEAL GENE THERAPY
Some patients currently ineligible (children, NAb, factor inhibitors)	**Pediatric to adult patients, individualized titration, repeat administration**
Viral	**Non-viral**
Known/unknown risks, liver toxicity, impaired immunity	**Acute and long-term safety**
Long-term safety and durability	**Stable durability of effect**
High cost	**Lower cost**

Source: Adapted from Dr. Steven Pipe (University of Michigan) presentation at Poseida's Genetic Medicines R&D Day

POSEIDA THERAPEUTICS

Poseida's non-viral system has potential to address unmet needs for Hemophilia A patients

- Non-viral lipid nanoparticle (LNP) delivery less immunogenic
- Greater access without concerns of prior viral exposure
- Titrate-to efficacy, or re-dosing, for a personalized therapy



- Transposition in hepatocytes for potential long-term durability
- 13 months of FVIII expression with potential for longer
- Key advantages in adolescents, for early intervention

- Large transposon cargo capacity enables whole gene restoration
- Optimally suited for both FVIII gene along with key *cis*-regulatory elements

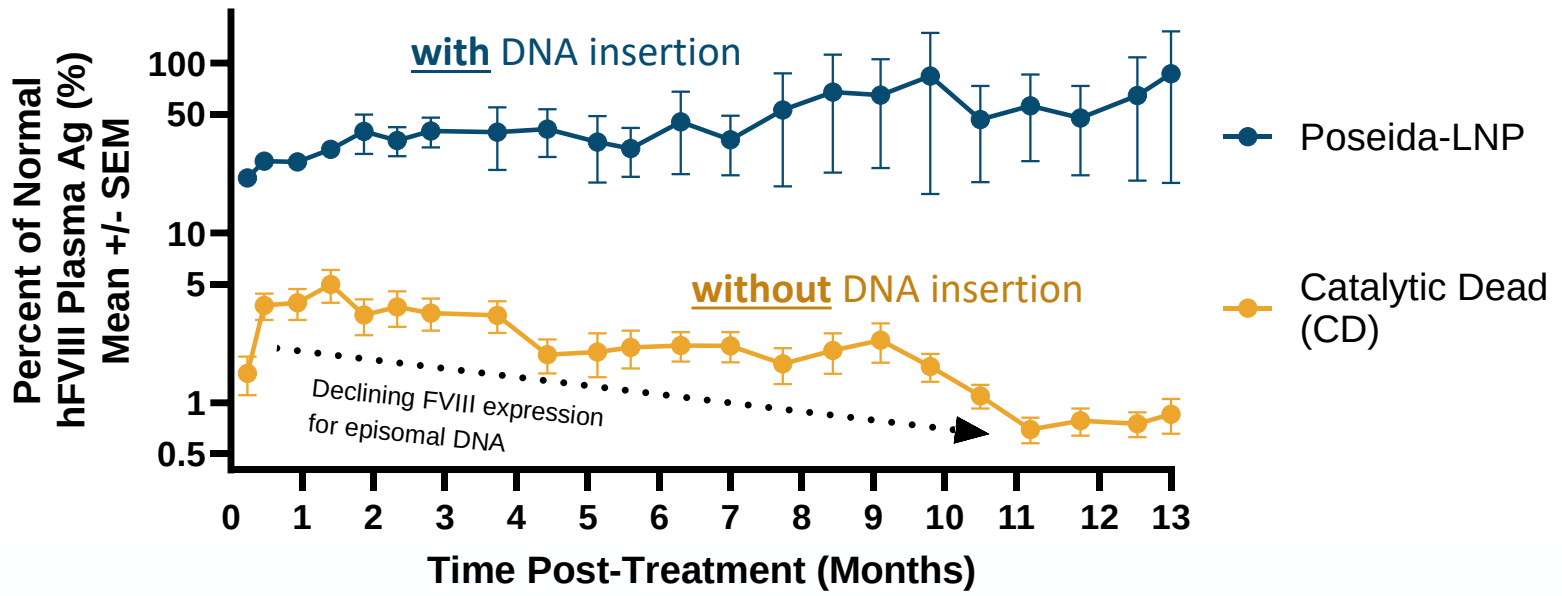
- Flexibility: modulate through an inducible off-switch
- Titrate down, switch off, or swap out therapies

Durability, pediatric ineligibility, non-viral, and personalized dosing are significant limitations associated with gene therapies available to Hemophilia A patients today

Durable FVIII expression achieved in adult mouse model across 13 mo.

Target levels achieved throughout study, providing key markers for success

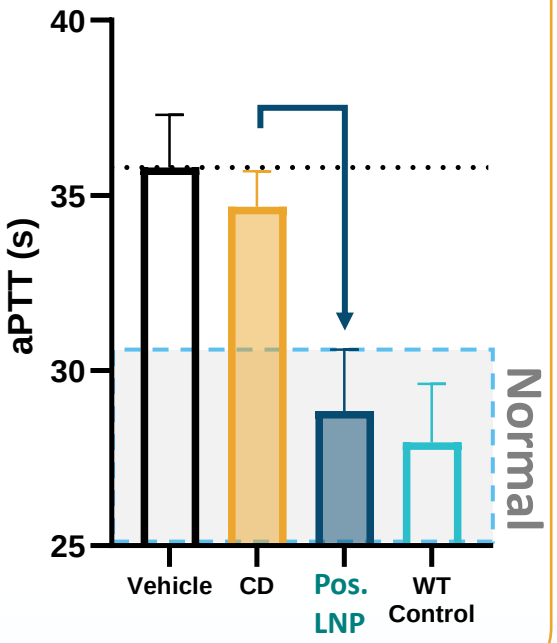
FVIII expression in adult Hemophilia A mice



Safe and stable protein expression

Clotting efficacy

13 months



Hemostasis achieved

INTERACT meeting with FDA (CBER) held in September 2024

Strong execution and significant progress across pipeline in 2024

Start of 2024

Cell Therapy for Oncology

- Partnerships with Roche and Astellas
- **3 clinical programs (2 enrolling)**
  - Initial data for P-BCMA-ALLO1 at ASH 2023

Genetic Medicines

- **3 preclinical programs**
  - Early preclinical data for P-FVIII-101 at ASH 2023 using both viral hybrid and nonviral technology

YTD Progress / Upcoming Catalysts

Cell Therapy for Autoimmune Disease

- ✓ Announced P-BCMACD19-ALLO1 as lead wholly owned program
- ✓ IND-enabling studies underway
- ❑ Further updates at Cell Therapy R&D Day event (Nov 14)

Validated Cell Therapy Portfolio for Oncology

- ✓ Expanded partnership with Roche to include new dual target program
- ✓ Established research collaboration and licensing agreement with Astellas to develop up to two novel *convertible*CAR® programs for solid tumors
- ✓ **3 enrolling clinical programs**
  - ✓ RMAT designation for P-BCMA-ALLO1; now in Phase 1b
  - ✓ Differentiated interim data for P-BCMA-ALLO1 at IMS 2024
  - ❑ P-BCMA-ALLO1 additional analysis of IMS Arm C patients at ASH 2024
  - ❑ P-CD19CD20-ALLO1 preclinical data at ASH 2024
  - ❑ P-MUC1C-ALLO1 data in 4Q24
  - ❑ P-CD19CD20-ALLO1 initial clinical data in 2025
- ❑ Early-stage and platform progress update at R&D day event (Nov 14)

Evolution to Fully Nonviral Approach in Genetic Medicines

- ✓ R&D day event in April
- ✓ **2 fully non-viral programs with initial preclinical data:**
  - ✓ ASGCT: P-KLKB1-101 early NHP data + preclinical P-FVIII-101 data
  - ✓ ACAAI: Additional P-KLKB1-101 preclinical data
- ✓ FDA INTERACT meeting for P-FVIII-101
- ❑ 1 IND planned for 2025

RMAT; regenerative medicine advanced therapy

POSEIDA THERAPEUTICS

Positioned for efficient value creation and leadership in allogeneic CAR-T therapy and non-viral genetic medicines

Low operating burn due to R&D reimbursements and milestone payments from collaboration partners

- **$231M in cash**, cash equivalents and short-term investments as of September 30, 2024
- **Well capitalized into early 2026** based on existing cash and expected baseline near-term payments from Roche

Emerging leader in allogeneic CAR-T with differentiated T_{scm} platform

- **Compelling and differentiated** initial clinical results with lead program in multiple myeloma
- **Strong partnerships** for hematologic malignancies (Roche) and solid tumors (Astellas)
- **High yield in-house manufacturing**, low COGS, off-the-shelf

Building value through proprietary pipeline with optionality for additional partnering

- **Expanding pipeline to CAR-T for autoimmune disease** with proprietary wholly owned asset
- **Genetic medicines** platform positioned to enter the clinic
- **Business development opportunities** and additional milestones and other payments from existing collaborations have potential to further extend cash runway with non-dilutive capital

Passionate and experienced leadership team driven to unleash value

Kristin Yarema, Ph.D.
President and CEO

AMGEN · NOVARTIS · ATARA BIO · McKinsey & Company

Syed Rizvi, M.D.
Chief Medical Officer

CARIBOU BIOSCIENCES · LEGEND BIOTECH · Celgene · NOVARTIS · MERCK

Johanna Mylet
Chief Financial Officer

HUYABIO INTERNATIONAL · Grant Thornton

Loren Wagner
Chief Operations Officer

Bristol Myers Squibb · Celgene · Allergan · Baxter

Devon J. Shedlock, Ph.D.
CSO, Cell Therapy

Perelman School of Medicine University of Pennsylvania · Penn Medicine Center for Cellular Immunotherapies

Blair Madison, Ph.D.
CSO, Gene Therapy

Washington University in St. Louis School of Medicine · Penn University of Pennsylvania

Mark Gergen
Executive Chairman

MIRATI THERAPEUTICS · AMYLIN · Halozyme

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Thank You

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