Company Presentation

January 2025

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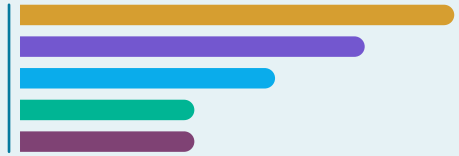
TSCAN THERAPEUTICS

TScan is a fully integrated, next-generation TCR-T cell therapy company

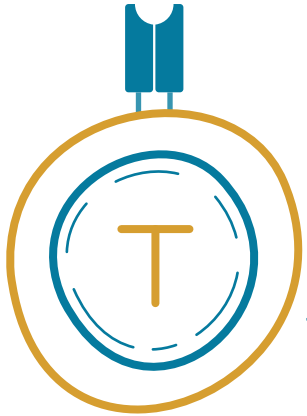
Clinical-stage oncology pipeline



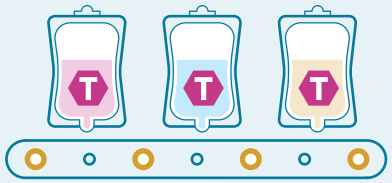
Clinical programs in heme and solid tumor malignancies

Proprietary discovery platform

Rapid discovery of targets and TCRs

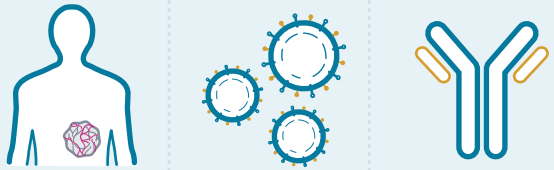


In-house GMP manufacturing



Transposon-based T cell engineering

Broad therapeutic potential

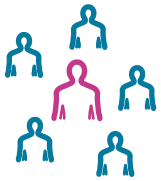


Oncology

Infectious disease

Autoimmune disease

TScan is building on the remarkable success of immunotherapy



Checkpoint & TIL therapy

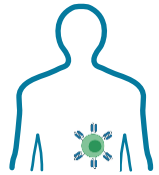
Rejuvenating and expanding a patient's existing T cells

- ✓ Proven efficacy in solid tumors
- ✓ Full range of targets seen by immune system
- ✗ Most patients lack anti-cancer T cells and do not respond
- ✗ Limited applicability to heme malignancies to date

TCR-T therapy

Engineering T cells to express natural T cell receptors

- ✓ Promising efficacy in solid tumors
- ✓ Full range of targets seen by immune system
- ✓ T cells engineered with natural anti-cancer TCRs
- ✓ Promising efficacy in heme malignancies



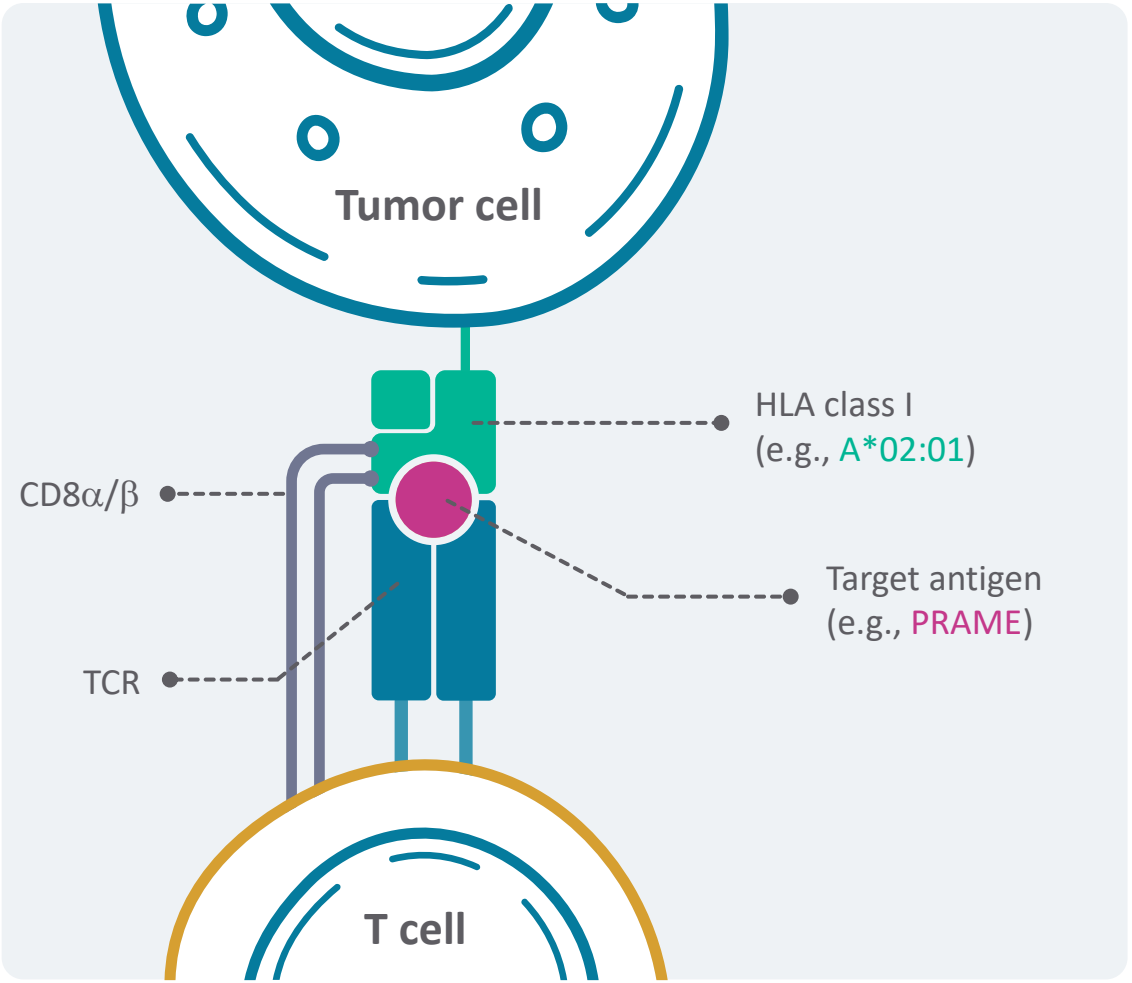
CAR-T therapy

Engineering T cells with a synthetic receptor

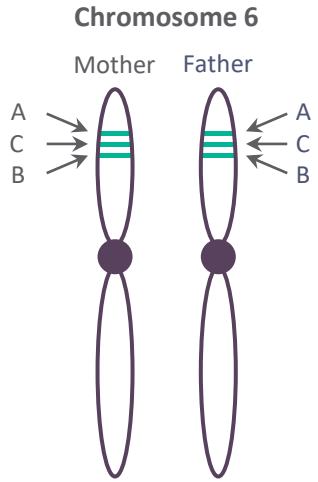
- ✗ Poor solid tumor penetration
- ✗ Limited to cell surface antigens
- ✓ T cells engineered with potent targeting receptors
- ✓ Proven efficacy in heme malignancies

TSCAN THERAPEUTICS

TScan is targeting the most frequent human leukocyte antigens (HLAs) to address a broad patient population



Everyone has six class I HLAs



There are 100s of different HLA types

~90% of people in the U.S. are positive for at least one of the top six HLA types*

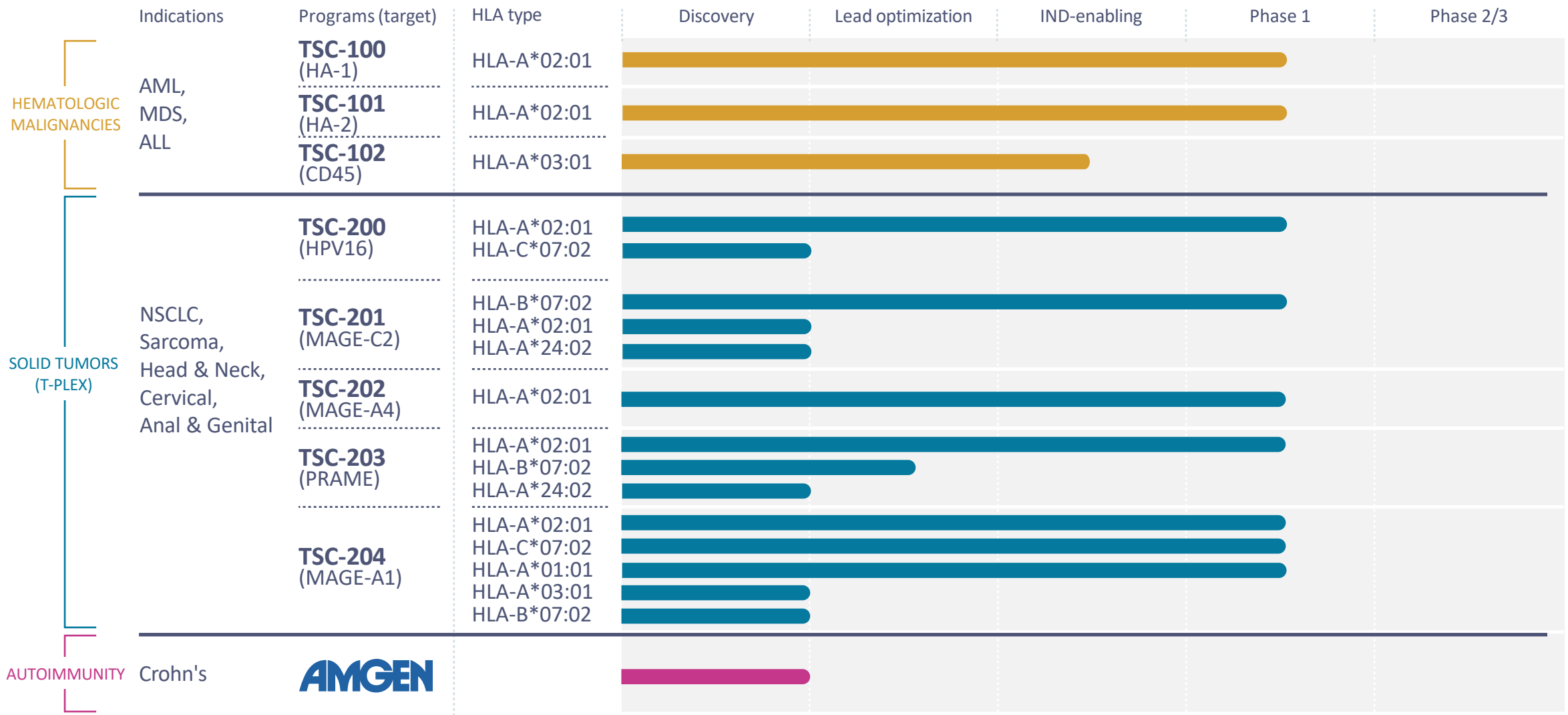
	% people positive for each HLA type		
HLA type	United States	Europe	Asia
A*02:01	42	47	19
A*01:01	24	26	14
A*03:01	22	25	7.0
B*07:02	20	21	8.1
C*07:02	24	23	24
A*24:02	17	19	37

Most TCR-T companies only target **one** HLA (A*02:01)

TScan is developing a broad pipeline targeting the top **six** HLAs

*allelefrequencies.net

Nine TCR-T candidates in clinical development, with new TCR-Ts advancing



TSCAN THERAPEUTICS

Heme Malignancies:
TSC-100, TSC-101, TSC-102-A0301

Targeting residual disease to prevent relapse in patients undergoing allogeneic HCT

TSCAN THERAPEUTICS

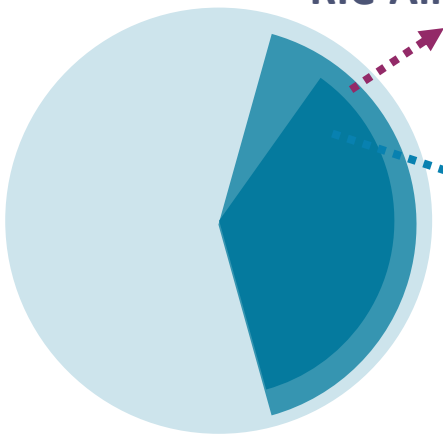
Relapse after hematopoietic cell transplant remains an unmet need

AML, MDS, some ALL is not addressed by CAR-T due to shared antigens with normal blood cells

Allogeneic hematopoietic cell transplant (HCT) expected to remain standard of care

Allo-HCT creates a unique opportunity to safely target residual cancer cells while sparing normal blood cells

38-44% of patients relapse within two years following RIC-Allo-HCT[1]

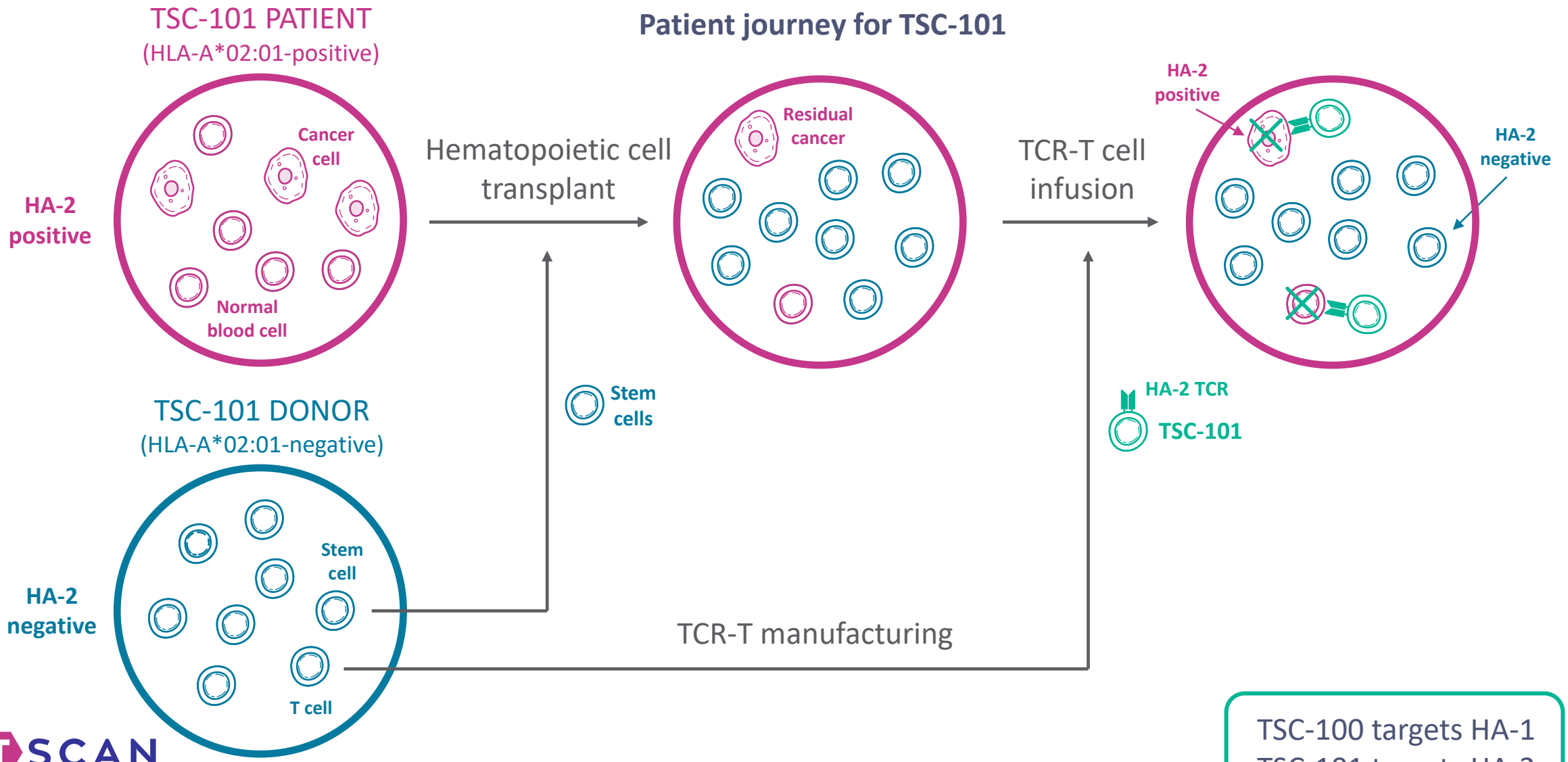


Of those who relapse, **>80%** die within two years[2]

Targeting antigens mismatched between patients and donors can potentially prevent relapse after allo-HCT

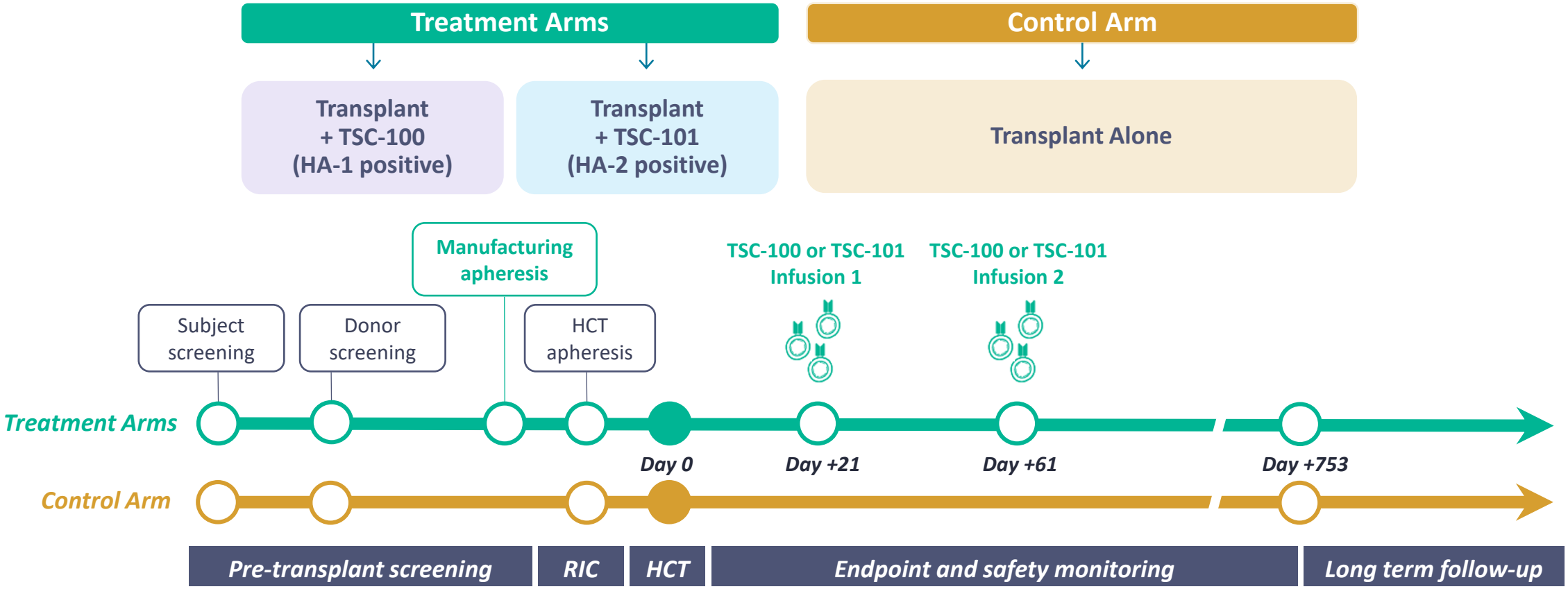
1. CIBMTR analysis of AML, ALL, MDS allogeneic transplants with reduced intensity conditioning (RIC) between 2017-2019 with 2-year follow-up
2. Schmid, Blood 2012, Spyridonidis, Leukemia 2012, Schmid, Haematologica 2018

TSC-100 and TSC-101 are adjuvant TCR-T cell therapies designed to eliminate residual cancer and prevent relapse following HCT



TSC-100 targets HA-1
TSC-101 targets HA-2

ALLOHA™, a multi-arm Phase 1 trial for TSC-100 & TSC-101 in subjects with AML, ALL, and MDS (NCT05473910)



Key eligibility criteria

- Age ≥18 years
- Undergoing first allo-HCT for ALL, AML, MDS
- Subject positive for HA-1 (or HA-2) with a haploidentical HA-1 (or HA-2) negative donor
- Eligible for RIC-HCT followed by PTCy for GvHD prophylaxis

Key endpoints

- Safety: Dose limiting toxicities, adverse events
- Efficacy
- Exploratory endpoints: Donor chimerism, minimal residual disease

TSCAN THERAPEUTICS

ALL, acute lymphoblastic leukemia; AML, acute myeloid leukemia; MDS, myelodysplastic syndromes; GvHD, graft vs host disease; RIC-HCT, reduced intensity conditioning hematopoietic cell transplantation

Majority of subjects in the treatment and control arms are at high risk for relapse

		TSC-100	TSC-101	Any TSC	Control
Subjects Enrolled and Assigned		14	12	26	13
Subjects Transplanted (efficacy data cohort)		14	12	26	12
Subjects Infused (safety data cohort)		10	12	22	N/A*
Median Time of Follow Up, months		4.0 (0-19)	6.4 (1-21)	5.1 (0-21)	7.1 (1-25)
Age, Median (Range)		69 (39-76)	66 (52-74)	67 (39-76)	66 (23-74)
Sex, Male (n, %)		10 (71%)	7 (58%)	17 (65%)	6 (46%)
Underlying Disease	ALL	2 (14%)	2 (17%)	4 (15%)	0 (0%)
	AML	10 (71%)	7 (58%)	17 (65%)	8 (62%)
	MDS	2 (14%)	3 (25%)	5 (19%)	5 (38%)
Genetics/Cytogenetics	**TP53 Mutated**	**4 (29%)**	**2 (17%)**	**6 (23%)**	**2 (15%)**
	FLT3 Mutation	2 (14%)	0 (0%)	2 (8%)	5 (38%)
	Adverse Risk**	11 (79%)	10 (83%)	21 (81%)	8 (62%)
Pre-HCT MRD Positive* **		8 (57%)	5 (42%)	13 (50%)	7 (54%)
MRD Positive or Adverse Risk Genetics		**11 (79%)**	**10 (83%)**	**21 (81%)**	**10 (77%)**

*Control subjects that received transplant are included in the safety data cohort

**Adverse risk is defined as having either a IPSS-M mutation if the subject has MDS or European Leukemia Network (ELN) high risk genetics or cytogenetics for AML; ELN 2022 high risk genetics/ cytogenetics include mutated ASXL1, BCOR, EZH2, RUNX1, SF3B1, SRSF2, STAG2, U2AF1, ZRSR2, TP53, -5/ del(5q)/, -7,-17/ abn(17p), t(6;9), t(v;11q23.3), t(9;22), t(8;16), inv(3) or t(3;3), t(3q26.2;v), monosomal or complex karyotype (for AML); IPSS-M mutations are reported in Bernard et al, NEJM Evid, 2022 (for MDS)

***MRD measured by flow cytometry (lower limit of detection 0.1-1%) or NGS (lower limit of detection 0.05-0.1% in myeloid and 0.001-0.01% in lymphoid malignancies).

TSCAN THERAPEUTICS

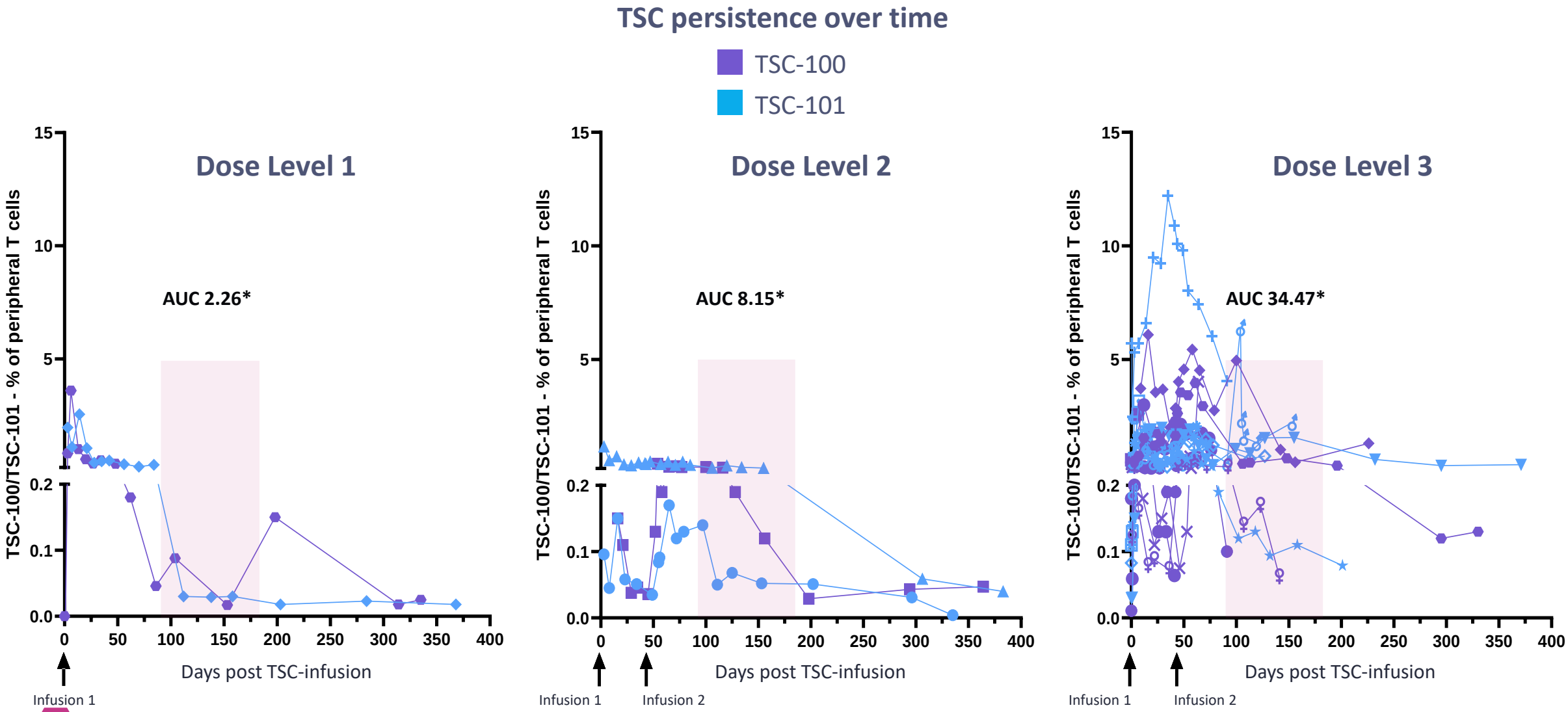
Safety data as of Nov. 20, 2024

Subjects treated at all three dose levels with no dose-limiting toxicities

Dose Level	Planned Day of Infusion Post HCT		TSC 100 N=10	TSC 101 N=12
	+21	+61		
DL1	5×10^6 TCR-T cells/kg	N/A	1	1
DL2	5×10^6 TCR-T cells/kg	5×10^6 TCR-T cells/kg	1	2
DL3	5×10^6 TCR-T cells/kg	20×10^6 TCR-T cells/kg	8	9

Safety data as of Nov. 20, 2024

TSC-100 and TSC-101 TCR-T cells detected for over one year with increased persistence seen at highest dose level (DL3)



*AUC of TSC-100/TSC-101 between Day 90-180 (Geometric mean(geometric CV)): DL1: 2.26(47.2%); DL2 and sDL2: 8.15(42.2%); DL3 and sDL3: 34.47(97.7%). Dose did not meet target dose criteria in supplemental dose level cohorts (sDL)

As of Nov 20, 2024 data cut

Adverse events of special interest were low grade and manageable

Adverse Event of Special Interest*	TSC-100 n=10	TSC-101 n=12	Any TSC n=22	Control n=12
Any Acute GvHD**	5 (50%)	6 (50%)	11 (50%)	4 (33%)
Grade II - IV	0 (0%)	2 (17%)	2 (9%)	3 (25%)
Grade III - IV	0 (0%)	1 (8%)	1 (5%)	2 (17%)
Any CRS	4 (40%)	8 (67%)	12 (57%)	6 (50%)
Grade 1 - 2	4 (40%)	8 (67%)	12 (57%)	6 (50%)
Grade 3 - 4	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Treatment-emergent CRS	1 (10%)	1 (8%)	2 (9%)	NA
Grade 1 - 2	1 (10%)	1 (8%)	2 (9%)	NA
Grade 3 - 4	0 (0%)	0 (0%)	0 (0%)	NA
Any ICANS	0 (0%)	0 (0%)	0 (0%)	0 (0%)

- Balanced Grade II – IV acute GvHD between treatment and control arms
- No cases of moderate or severe chronic GvHD
  - One case each of mild chronic GvHD in the treatment and control arms
- Two episodes of low-grade CRS reported post TSC infusions
  - One Grade 1 event (TSC-100) and one Grade 2 event (TSC-101)
- No cases of ICANS

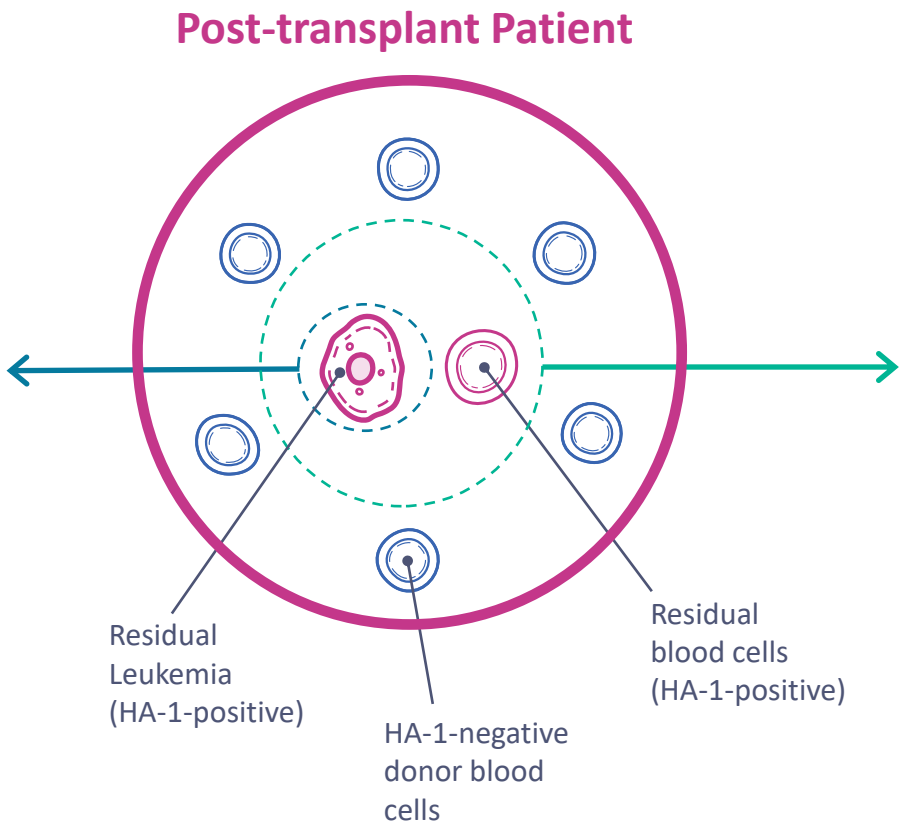
*MAGIC grading used for acute GvHD, NIH consensus grading for chronic GvHD, and ASTCT grading used for CRS or ICANS
**Acute GvHD through 180 days post HCT

Safety data as of Nov. 20, 2024

Key biomarkers for residual leukemia or residual patient-derived blood cells serve as potential early surrogates of efficacy

Minimal Residual Disease (MRD)

MRD+: high risk of relapse
MRD-: low risk of relapse[1, 2]



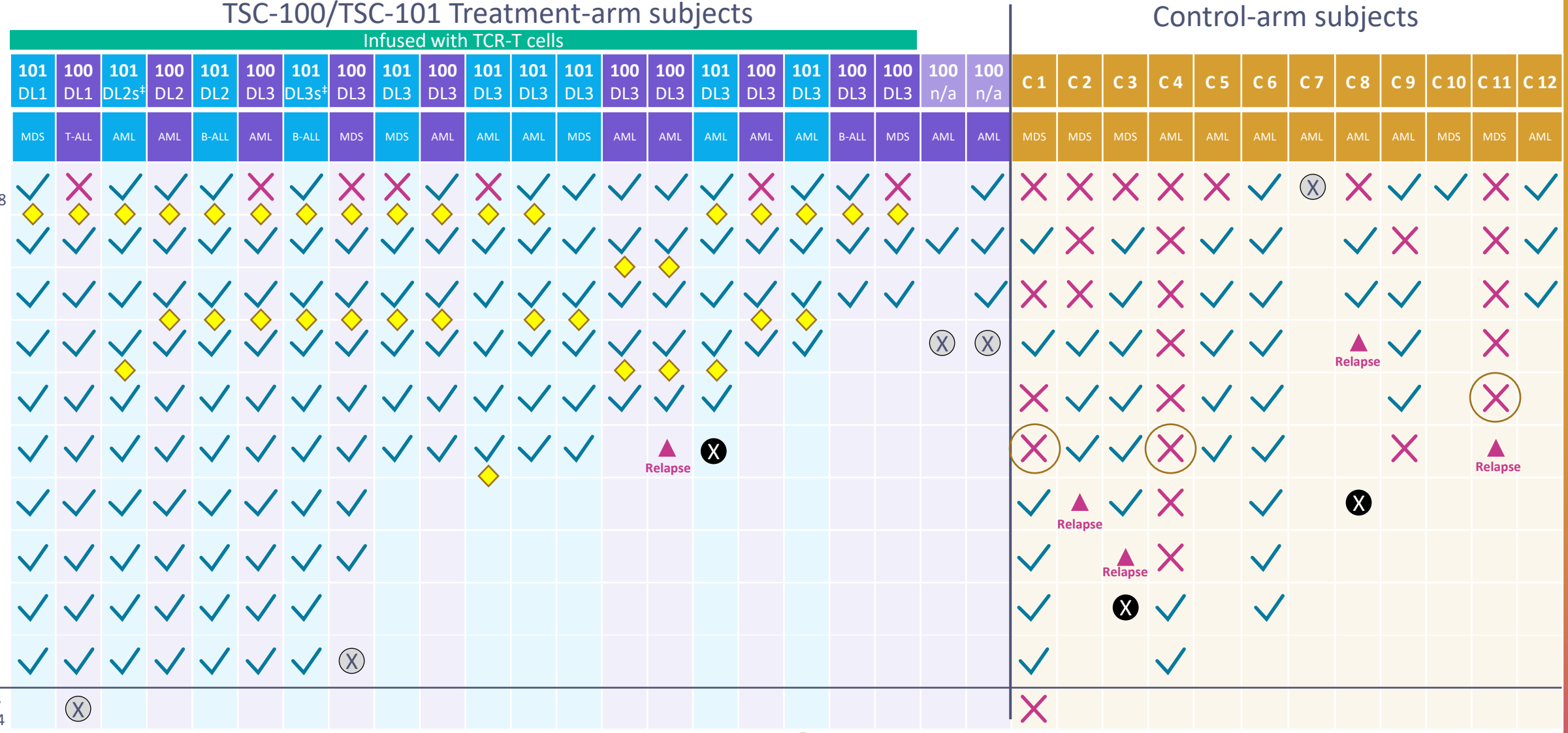
Donor Chimerism

Mixed: high risk of relapse
Complete: low risk of relapse[3]

1. Craddock, J Clin Oncol, 2021
2. Loke, ASH, 2021
3. Lindhal, Bone Marrow Transpl, 2022

TSCAN THERAPEUTICS

Complete donor chimerism achieved in all patients after initial TSC infusion



Donor chimerism results using commercially available **short tandem repeat (STR) assay** with LOD of 1-2% at indicated times post-HCT ± 3 days in patients at least 60 days post-HCT as of data cut; ‡Dose did not meet target dose criteria in supplemental cohorts

Efficacy data as of Dec. 2, 2024

Unusual circumstances for both subjects who relapsed post TCR-T cell infusions

TSC-101 Dose Level 3

- 65 y/o male with AML
- Did not respond to induction chemotherapy (4% blasts)
- *Taken to transplant after reinduction chemotherapy without achieving CR* [1]
- Died Day 129 post transplant with suspected relapse

TSC-100 Dose Level 3

- 59 y/o male with AML
- *Donor apheresis for manufacturing occurred after G-CSF mobilization* [2]
- Manufacturing was challenging due to high neutrophils; repeat manufacturing required
- Both infusions were delayed (Day 41 and Day 97)
- Relapse observed in CNS at Day 139 post-transplant with no systemic relapse

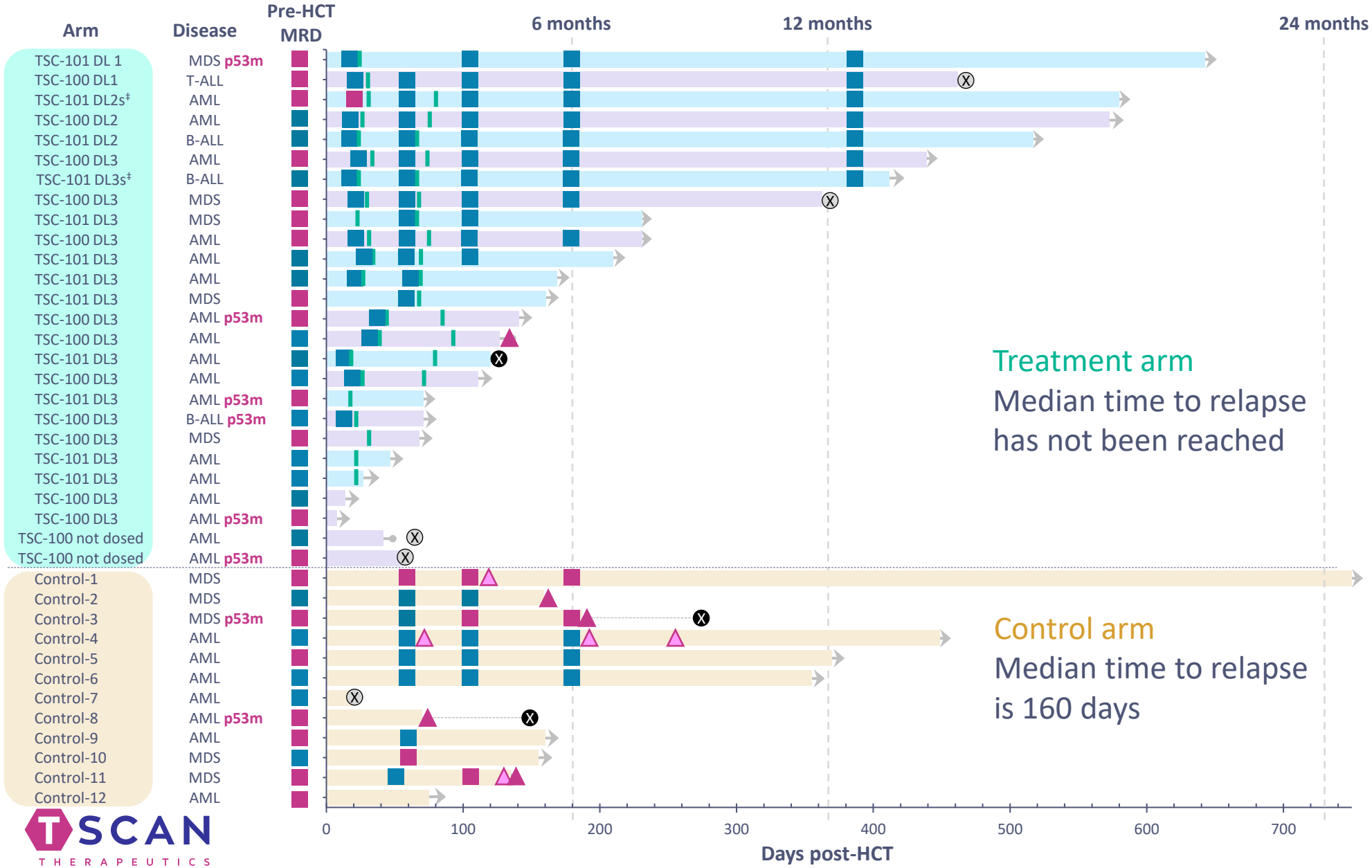
[1] Not observed in any other patient

[2] Occurred twice

Neither circumstance would be permitted in pivotal trial

TSCAN THERAPEUTICS

MRD negativity achieved in all treatment-arm subjects

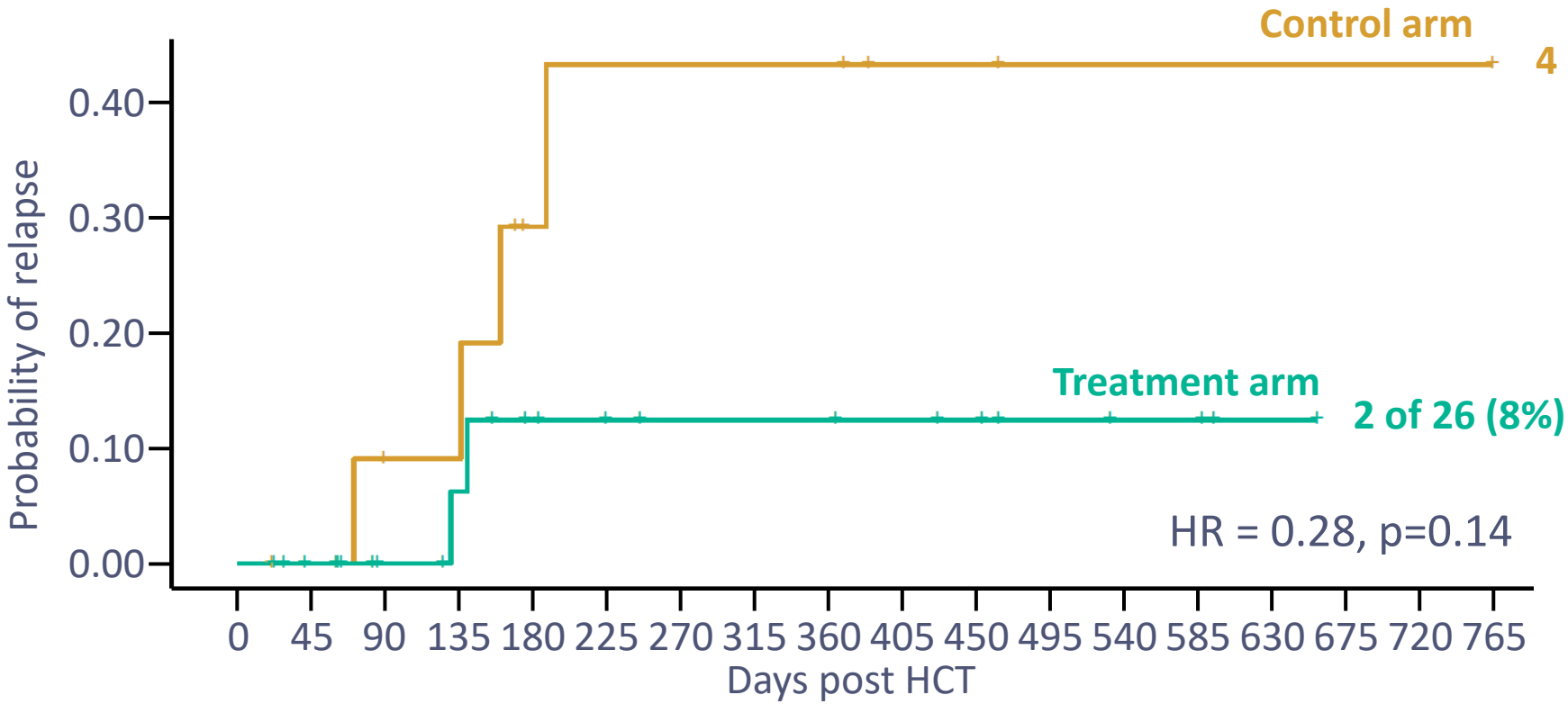


‡Dose did not meet target dose criteria in supplemental cohorts

MRD measured by flow cytometry (lower limit of detection 0.1-1%) or NGS (lower limit of detection 0.05-0.1% in myeloid and 0.001-0.01% in lymphoid malignancies).

Efficacy data as of Dec. 2, 2024

TCR-T infusion is associated with fewer relapses



Number at risk

Control arm	12	11	9	9	5	4	4	4	4	2	2	1	1	1	1	1	1	1
Treatment arm	26	23	17	15	12	10	8	8	8	7	6	4	3	3	1	0	0	0

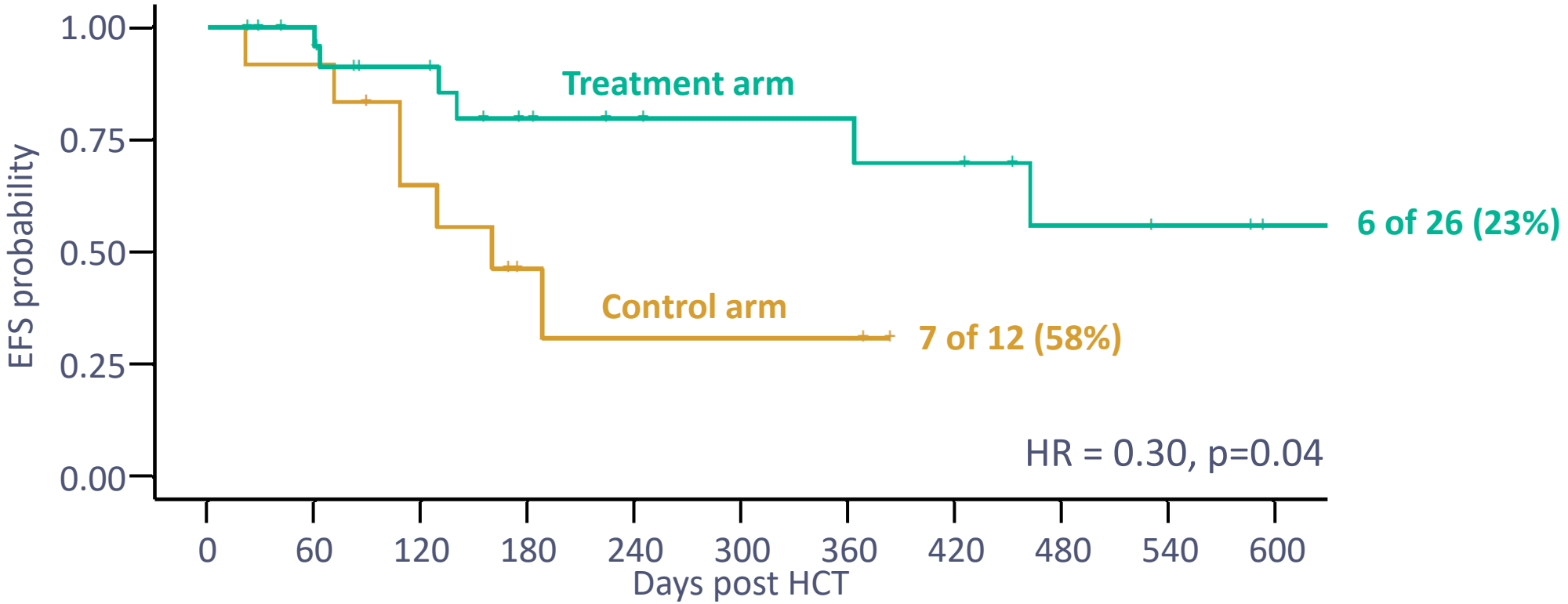
Cumulative number of events

Control arm	0	0	1	1	3	4	4	4	4	4	4	4	4	4	4	4	4	4
Treatment arm	0	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2

CoxPH Ratio = 0.275, CI = (0.05, 1.502), p = 0.136; Log–rank p = 0.1105

Efficacy data as of Dec. 2, 2024

Event-free survival (EFS) favors the treatment arm



Number at risk

Control arm	12	11	7	3	2	2	2	0	0	0	0
Treatment arm	26	23	17	12	10	8	8	7	4	3	1

Cumulative number of events

Control arm	0	1	4	6	7	7	7	7	7	7	7
Treatment arm	0	1	2	4	4	4	4	5	6	6	6

TSCAN THERAPEUTICS

Event defined as relapse, clinical intervention for impending relapse (non-TSC), or death
Cox PH Ratio = 0.304, CI = (0.096, 0.966, p = 0.0435); Log-rank p = 0.0321

Efficacy data as of Dec. 2, 2024

ALLOHA™ Phase 1 data support launch of pivotal trial in H2 2025

- Infusions with TSC-100 and TSC-101 were well-tolerated with no DLTs and adverse events consistent with HCT
- TSC-100 and TSC-101 TCR-T cells have been detected >1 year post infusion and have a clear dose-persistence relationship
- 2 of 26 (8%) treatment-arm subjects relapsed as compared to 4 of 12 (33%) control-arm subjects
    - Median time to relapse was not evaluable in TCR-T-treated subjects vs 160 days in the control arm
    - Event-free survival strongly favors the treatment arm (HR=0.30)

Safety data as of Nov. 20, 2024

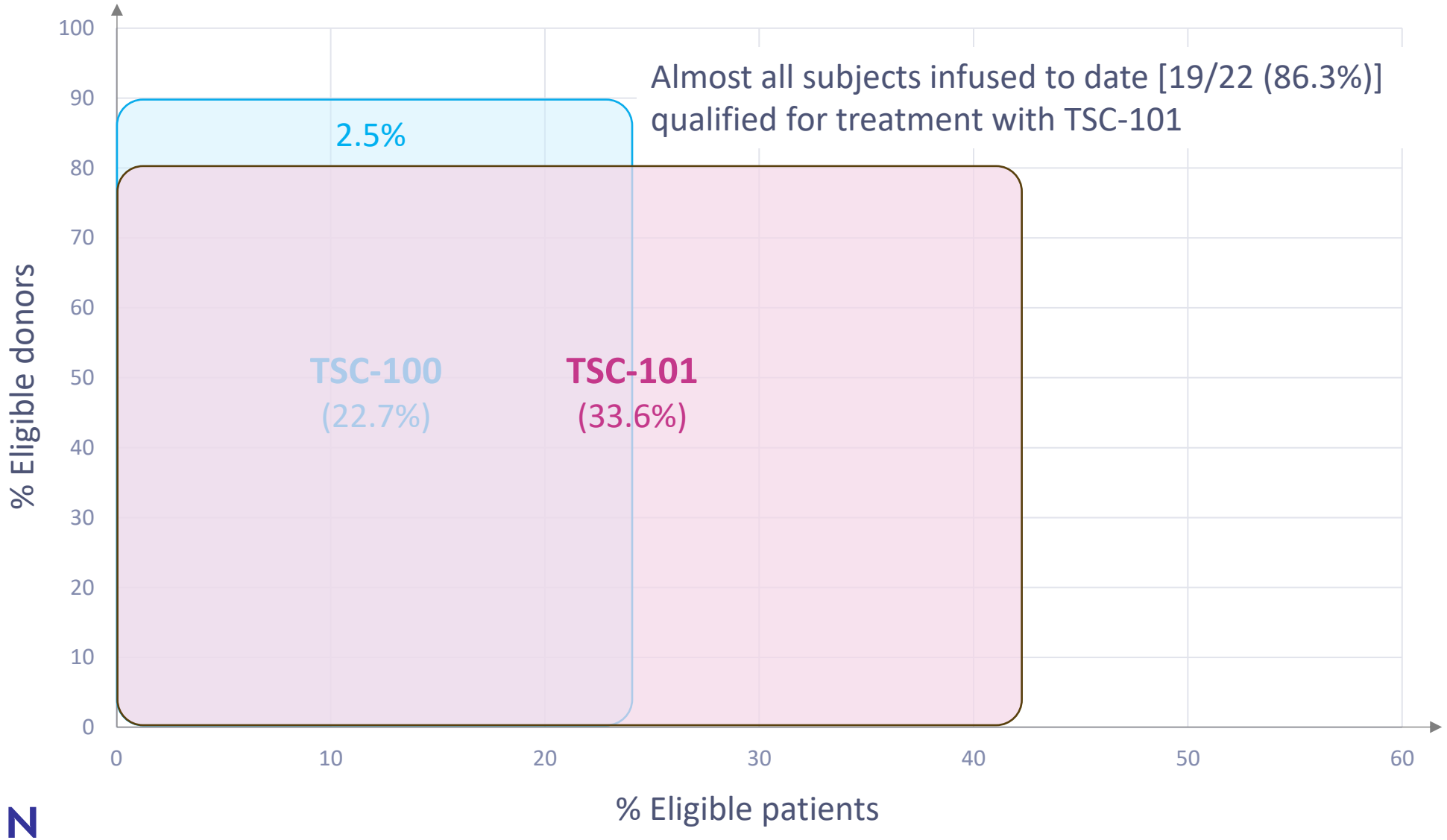
Efficacy data as of Dec. 2, 2024

Heme Development Strategy

Targeting residual disease to prevent relapse in patients undergoing allogeneic HCT

TSCAN THERAPEUTICS

TSC-101 captures ~98% of HLA-A*02:01-positive patients, obviating the need for TSC-100 or a companion diagnostic



Sources: Wang, AACR 2022; Spierings, PLoS Genetics 2007; CIBMTR 2023

Pivotal study designed for full approval using an external control arm

Subjects: AML, MDS, ALL undergoing transplant with reduced intensity conditioning (RIC)
Donors: Haploidentical and mismatched unrelated donors
Enrollment: TSC-101 vs matched controls (1:3)
Companion Diagnostic: Not needed

Treatment arm
(HLA-A*02:01, HA-2 positive)

↓

RIC Transplant + TSC-101

Synthetic control arm
CIBMTR

↓

RIC Transplant alone matched to TSC-101 subjects

Endpoints

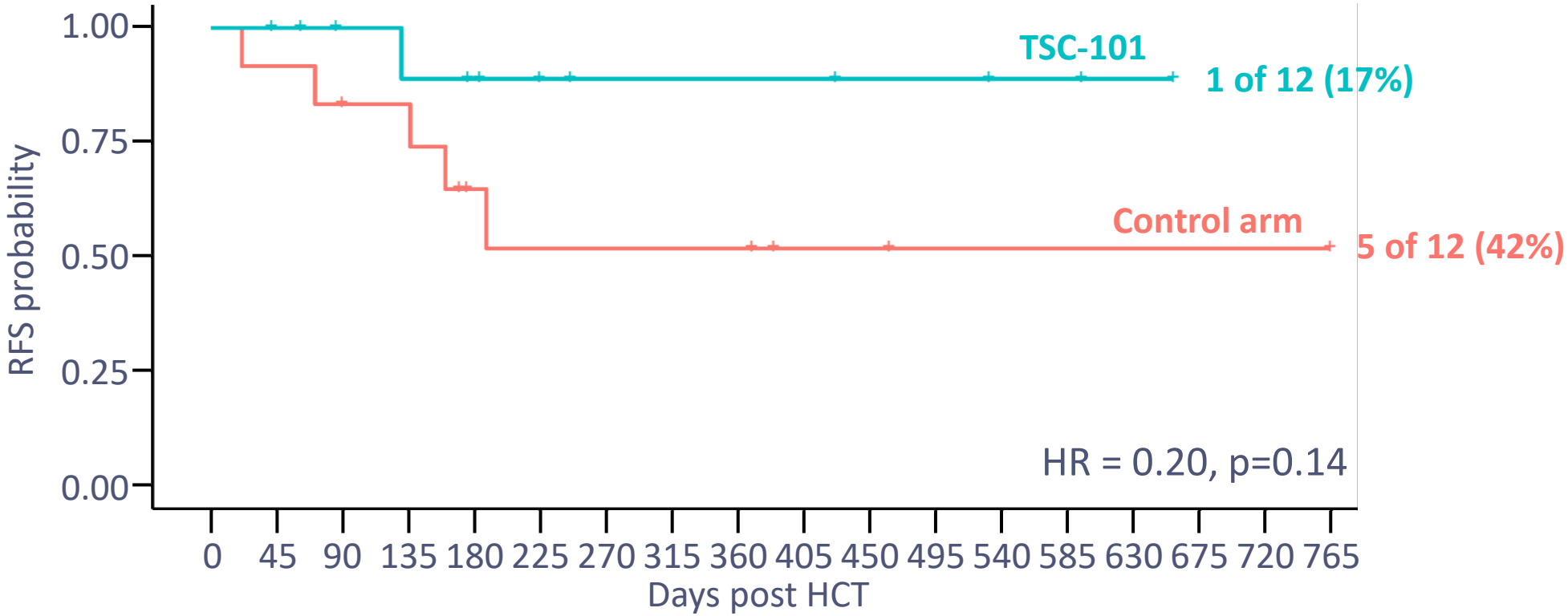
- **Primary**: Relapse-free survival (RFS; Full approval)
- **Key Secondary**: Overall survival, time to relapse, event-free survival
- **Exploratory**: MRD, complete chimerism rates

Readouts

- **Full Approval**: 184 relapse + death events
  - HR 0.60, 85% power
  - N = ~140 treatment arm subjects
- **Study Readout**: 24 months

TSCAN THERAPEUTICS

Target RFS hazard ratio of 0.60 is well supported by data from the ALLOHA™ Phase 1 study



Number at risk

Control arm	12	11	9	9	5	4	4	4	4	2	2	1	1	1	1	1	1	1
Treatment arm	12	11	9	8	7	5	4	4	4	4	3	3	2	2	1	0	0	0

Cumulative number of events

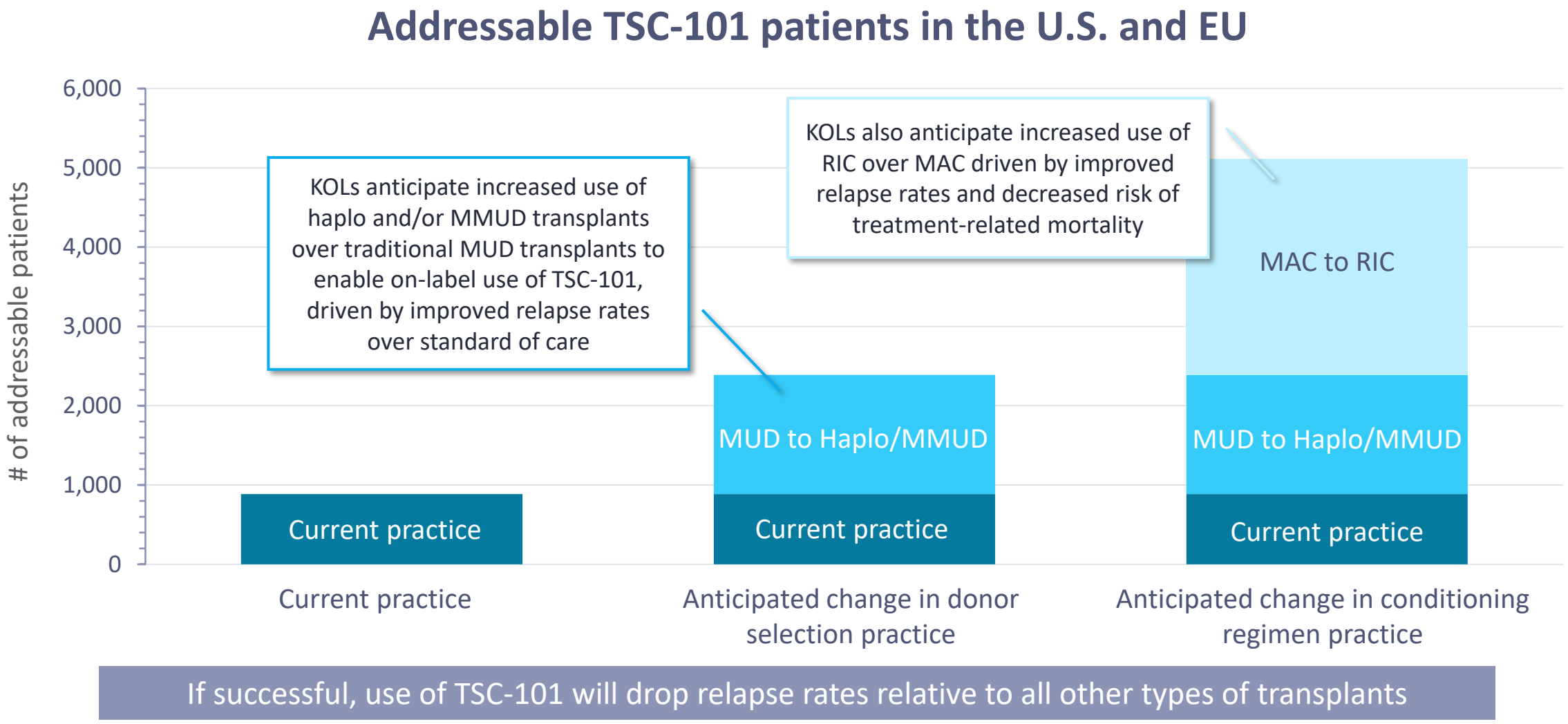
Control arm	0	1	2	2	4	5	5	5	5	5	5	5	5	5	5	5	5	5
Treatment arm	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

TSCAN THERAPEUTICS

Event defined as relapse, or death
CoxPH Ratio = 0.2, CI = (0.023, 1.718), p = 0.1425; Log–rank p = 0.1034

Updated to include event in the treatment arm reported after the Nov 20, 2024 data cut

Increased use of reduced intensity conditioning with haploidentical/MMUD donors has the potential to dramatically expand the addressable market



If successful, use of TSC-101 will drop relapse rates relative to all other types of transplants

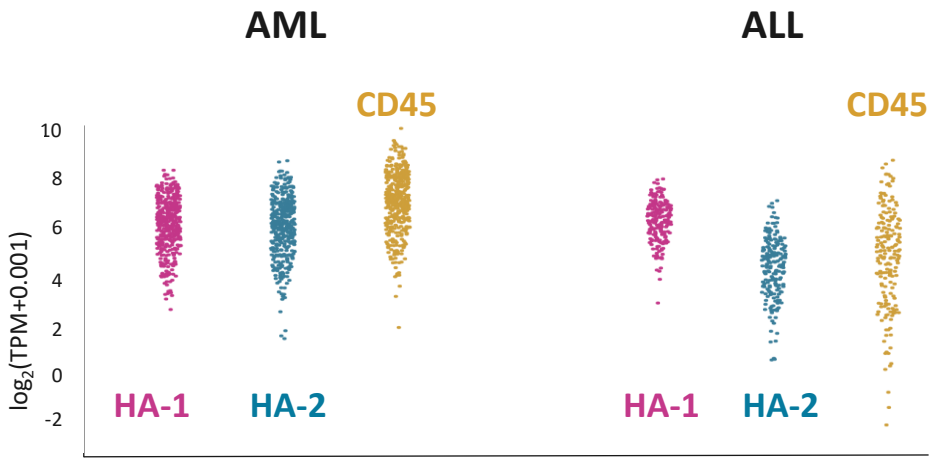
Sources: CIBMTR 2022 and 2023; Wang, AACR 2022; NMDP analysis; ClearView analysis. Assumes maximum practice change in each case

MUD, matched unrelated donor; Haplo, haploidentical transplant; MMUD, mismatched unrelated donor.

TCRs for additional HLA types will target epitopes on CD45, a universal source of antigens for heme malignancies

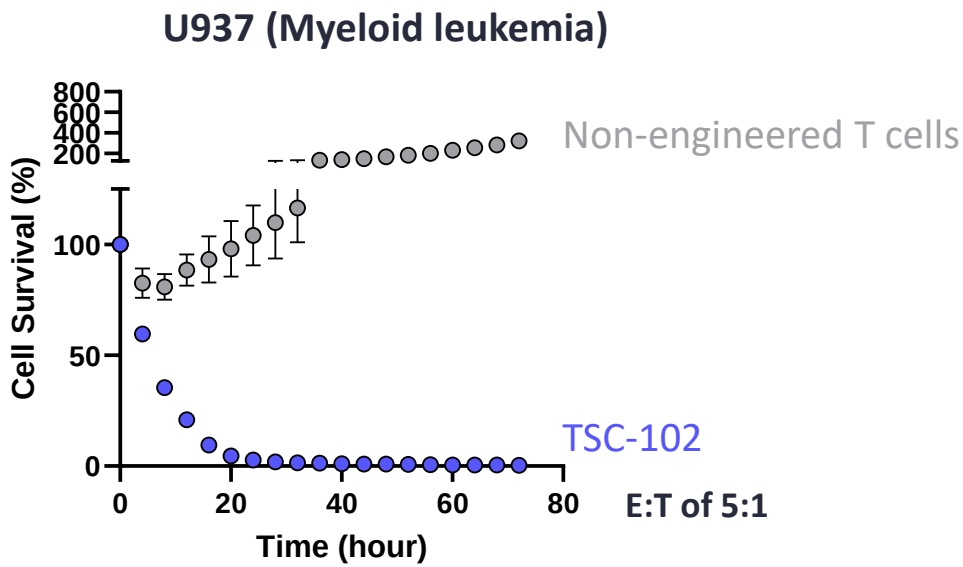
- CD45 is a lineage-specific antigen with expression in all hematopoietic cells, including HSCs
- CD45 is a large protein with many well-known epitopes for high frequency HLAs
- Antigen-negative donors can be selected by mismatching on HLA (using haploidentical and MMUD donors)

CD45 has high and uniform expression in AML and ALL

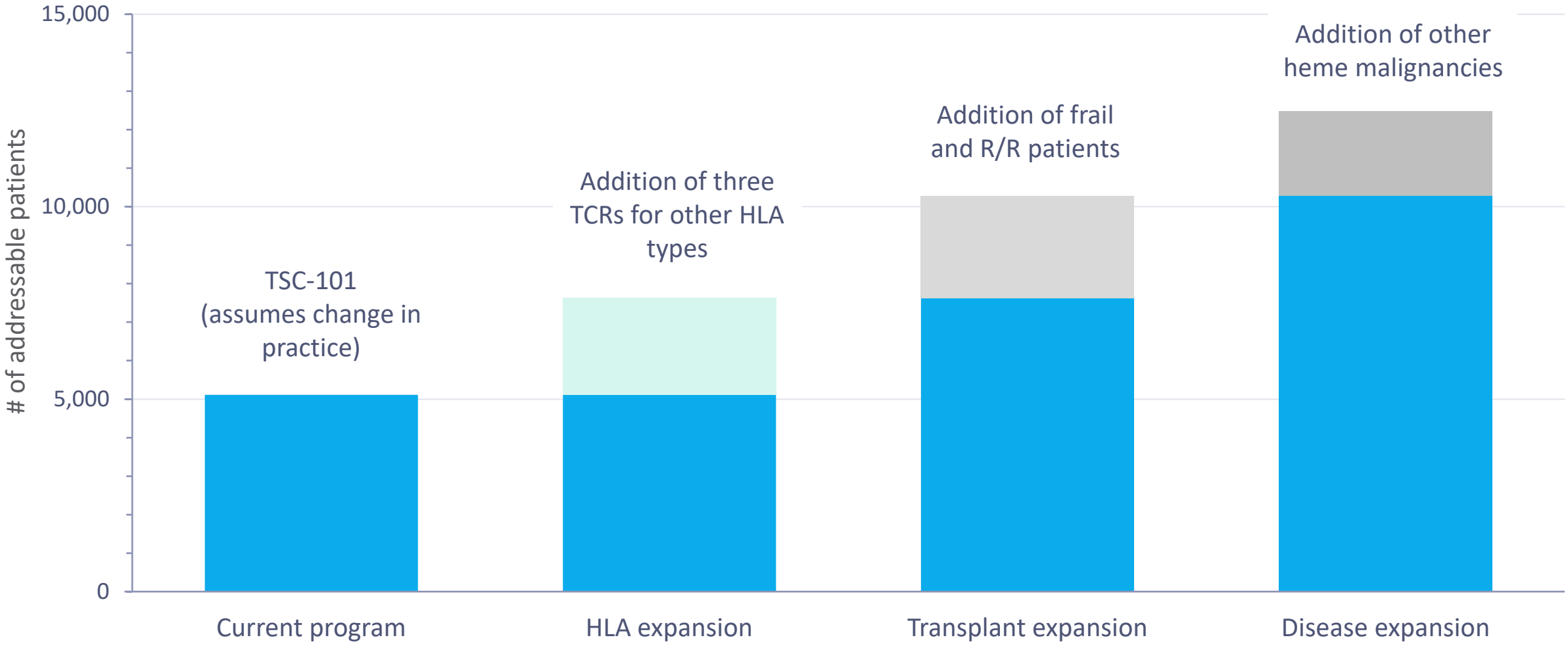


Source: TCGA

TSC-102 targets an antigen from CD45 presented on HLA-A*03:01



Expansion opportunities for the heme program provide a way to reach over 10,000 patients in the U.S. and Europe



Source: SEER, CIBMTR, EBMT, ClearView analysis

Solid Tumors:

TSC-200-A0201
TSC-201-B0702
TSC-202-A0201
TSC-203-A0201
TSC-204-A0201
TSC-204-C0702
TSC-204-A0101

Developing multiplex TCR-T therapy to overcome tumor heterogeneity

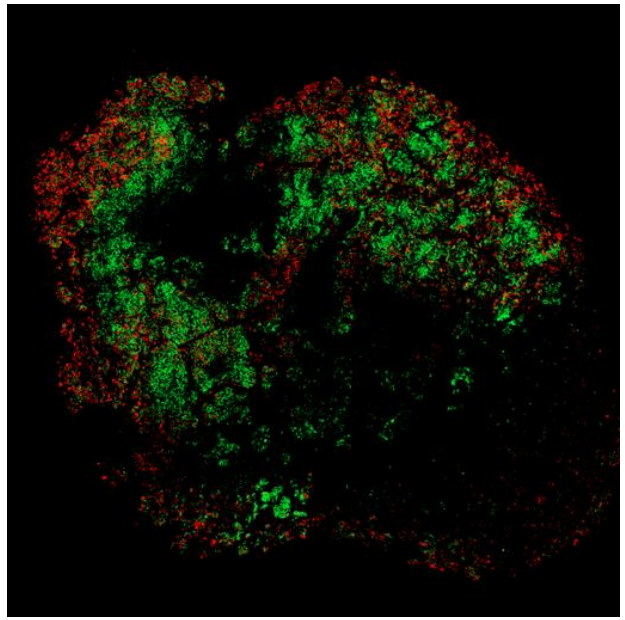
TSCAN THERAPEUTICS

Multiplex TCR-T therapy is designed to address the heterogeneity of solid tumors

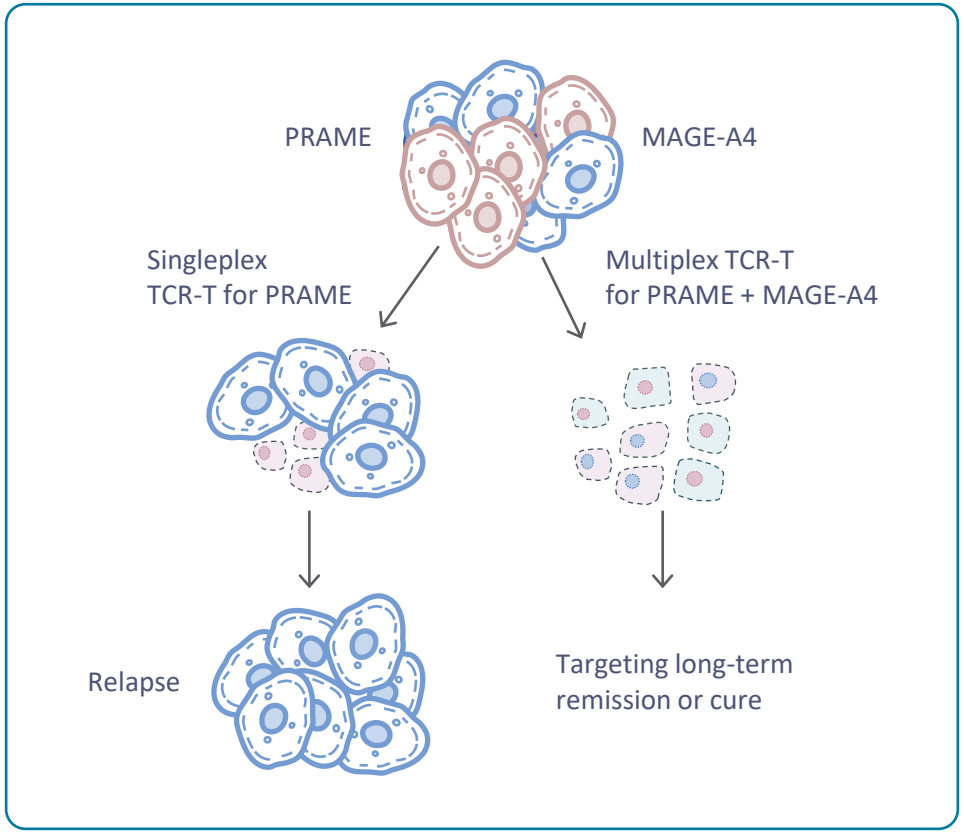
Many immune-rich cancers exhibit target heterogeneity

Non-small cell lung cancer

PRAME **MAGE-A4**



TCR-Ts against multiple targets may be required to improve efficacy and durability



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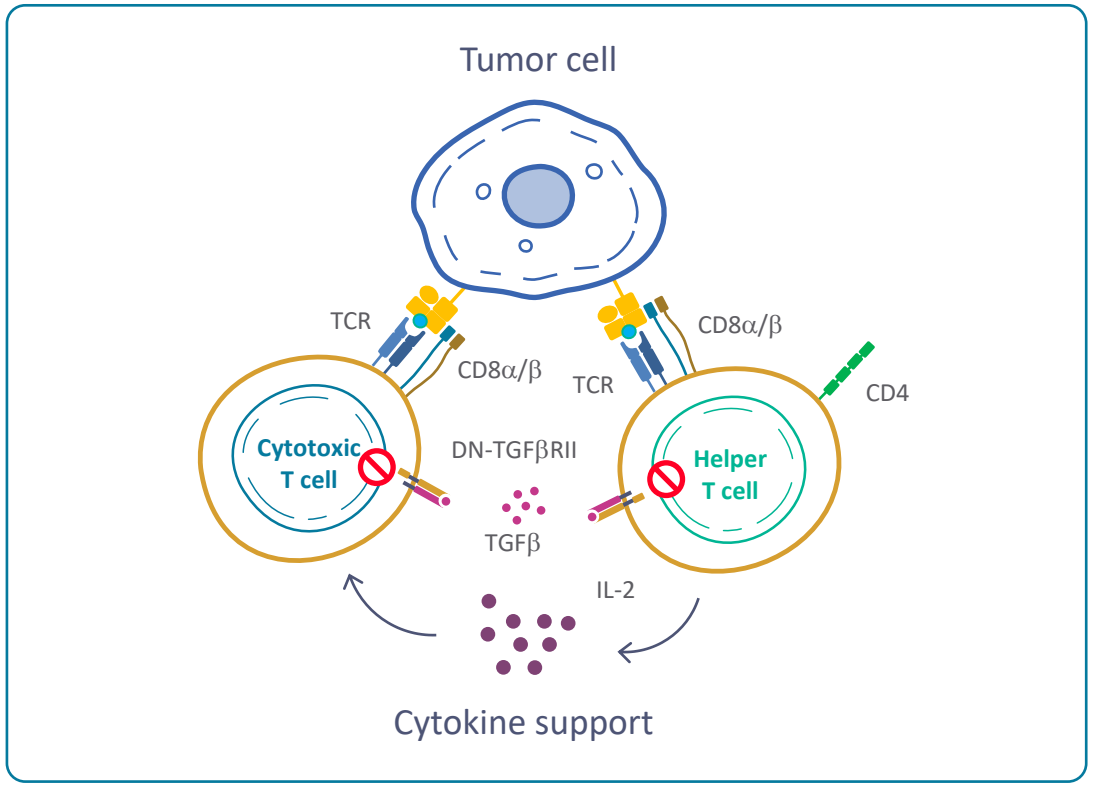
TScan's solution for combatting the hostile tumor microenvironment

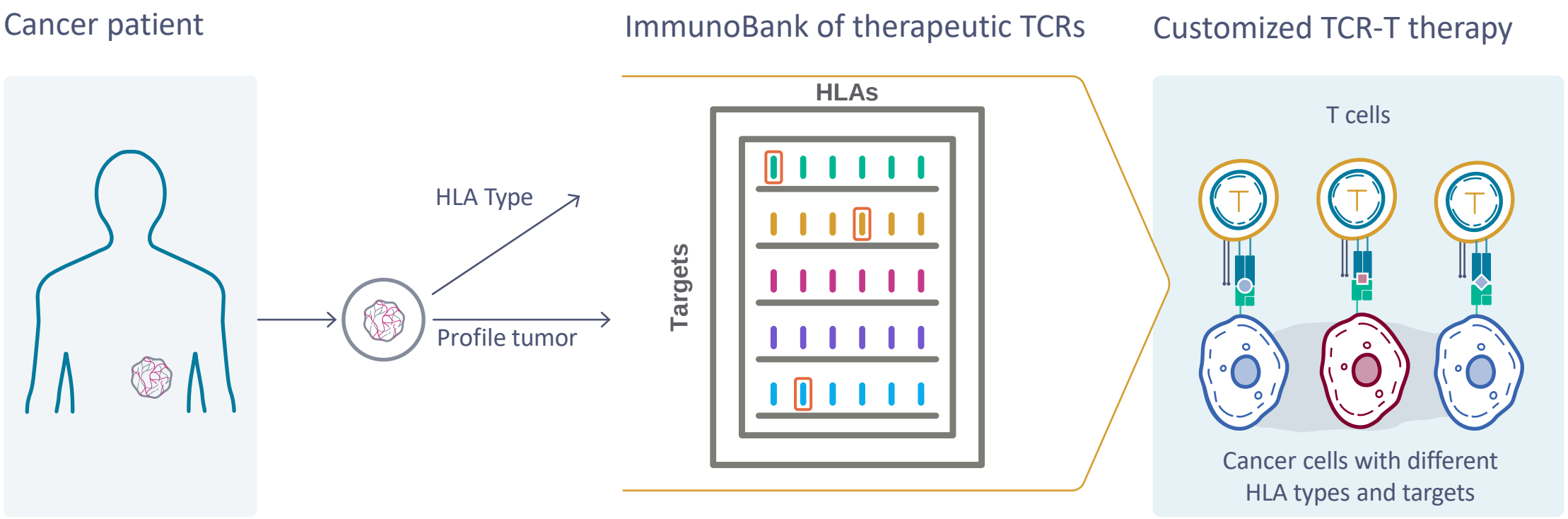


- Co-deliver CD8α/β to engage helper T-cells
- Co-deliver DN-TGFβRII to enhance T-cell expansion/persistence

Enhanced TCR-T enabled by TScan's transposon-based manufacturing platform

TSCAN THERAPEUTICS

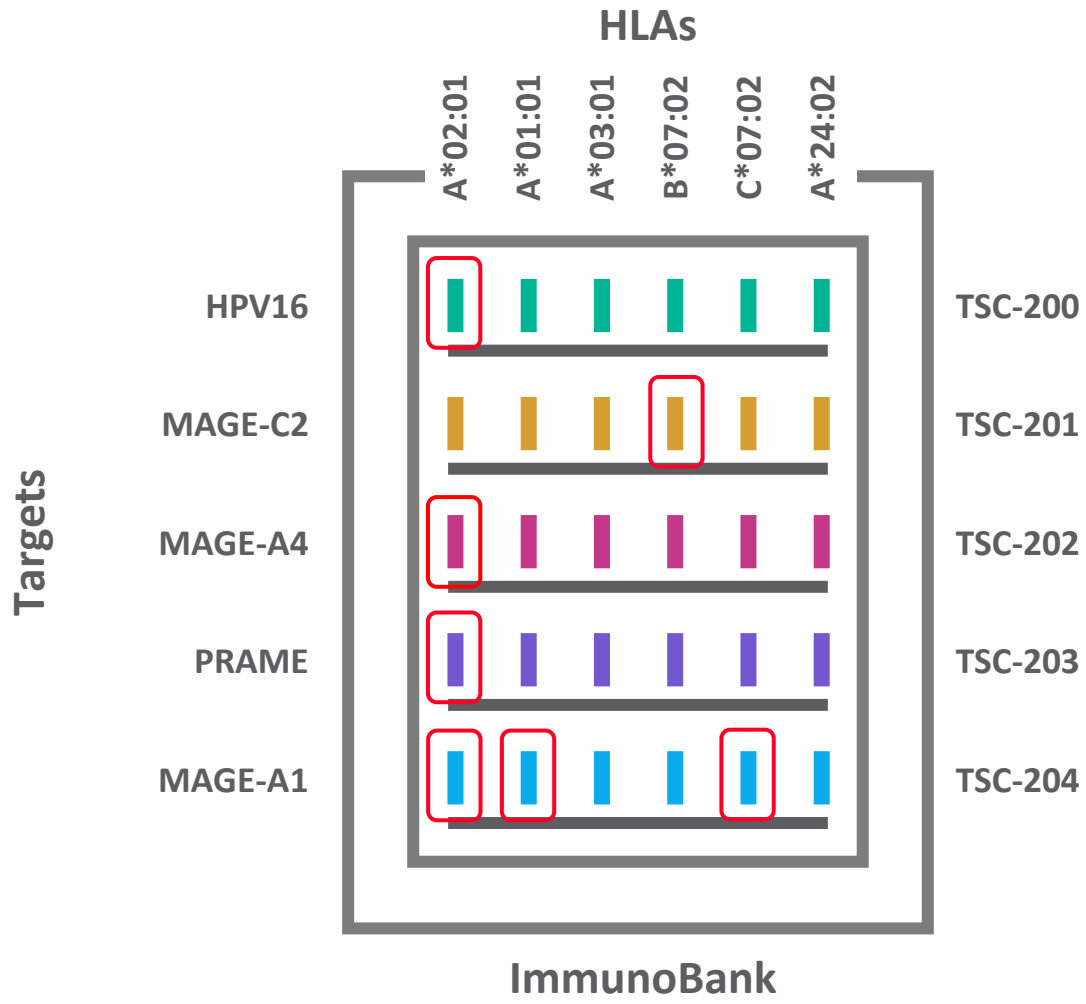
TScan is building the ImmunoBank of TCRs to enable multiplex TCR-T cell therapy



- Determine target and HLA expression in patient tumor
- Manufacture and administer customized, multiplex TCR-T therapy

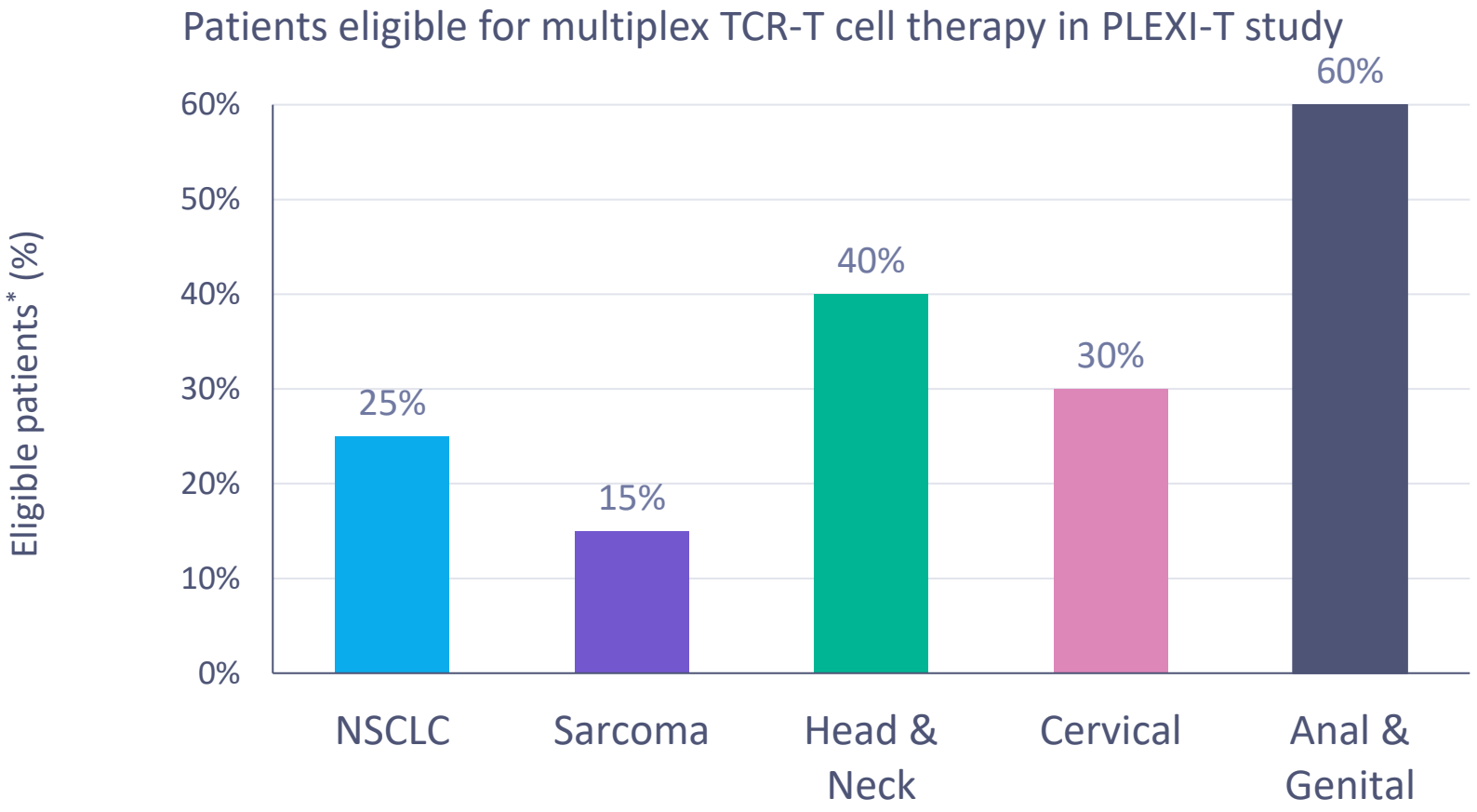
TSCAN THERAPEUTICS

TScan is strategically expanding the ImmunoBank to enable multiplex TCR-T therapy in immune-rich solid tumors



In PLEXI-T™ study

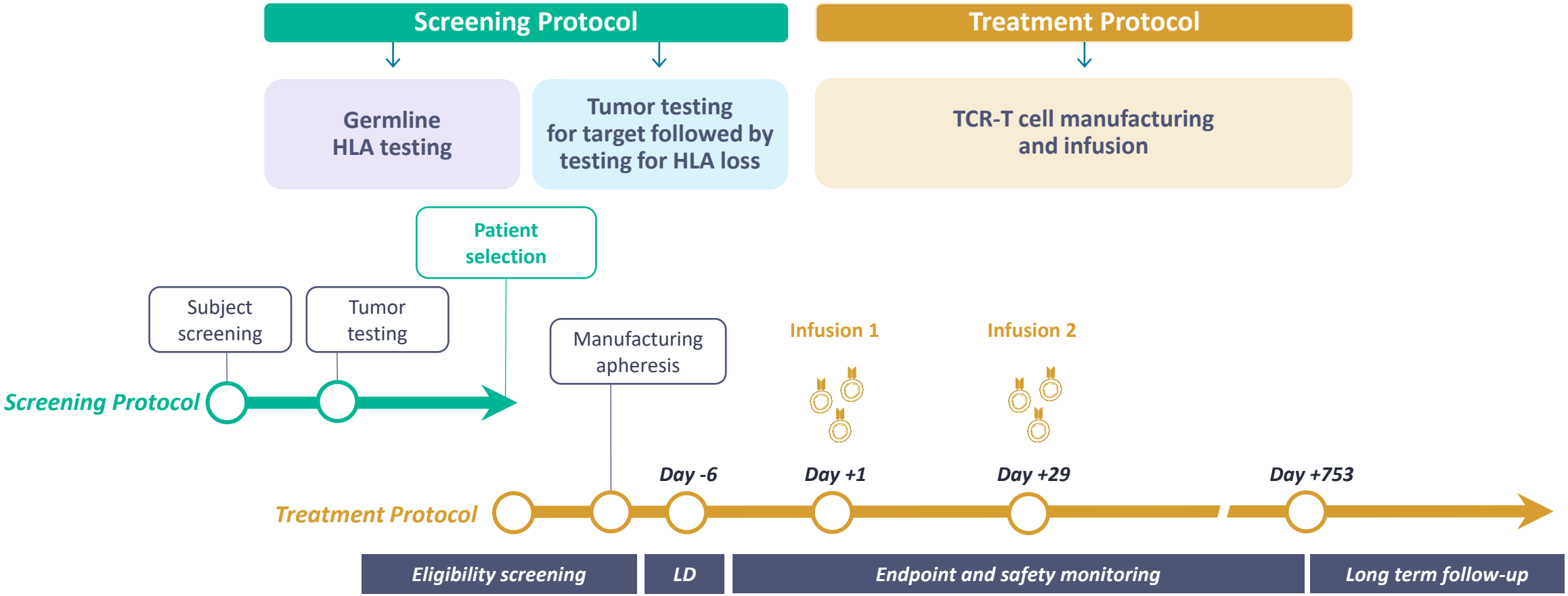
ImmunoBank expansion to seven TCRs has increased T-Plex eligibility across target indications



15-60% of patients are currently eligible for multiplex TCR-T cell therapy with the 7 TCRs in the current PLEXI-T study

*Eligible patients include patients who are positive for at least two TCR-Ts in the ImmunoBank

PLEXI-T™, a multi-arm basket Phase 1 trial in subjects with solid tumors (NCT05973487)



Key eligibility criteria

- Age ≥18 years
- Relapsed/refractory solid tumor after treatment with or refusal of SoC therapies
- Eligible for treatment on a Phase 1 study that requires lymphodepleting chemotherapy

Key endpoints

- Safety: Dose limiting toxicities, adverse events
- Efficacy
- Exploratory: T cell persistence

LD: lymphodepletion with fludarabine x 4 days and cyclophosphamide x 3 days; SoC: standard of care therapy; HLA: human leukocyte antigen

Dose escalation scheme provides a rapid path to multiplex TCR-T in Phase 1

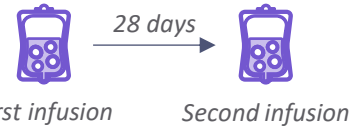
	TSC-204-A0201 (MAGE-A1)	TSC-204-C0702 (MAGE-A1)	TSC-200-A0201 (HPV16)	TSC-203-A0201 (PRAME)	TSC-201-B0702 (MAGE-C2)	TSC-204-A0101 (MAGE-A1)
DL1	0.5B **Cleared**	0.5B	0.5B **Cleared**	0.5B **Cleared**	0.5B **Dosed**	0.5B
DL2	2B	2B	2B **Cleared**	2B **Cleared**	2B	2B

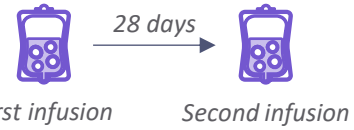
T-Plex

DL3 — Any two TCR-Ts that have cleared DL2

DL4 — Any two TCR-Ts that have cleared DL3

Singleplex





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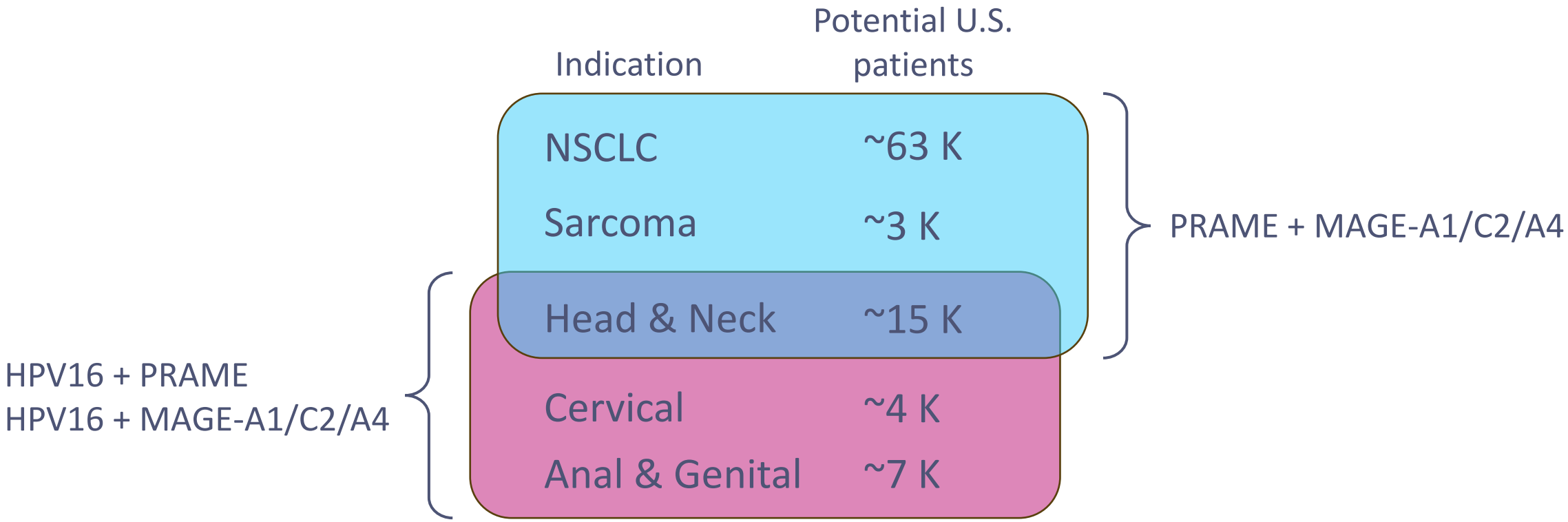
As of Dec. 5, 2024

T-Plex enrollment will focus on five key indications with high unmet need

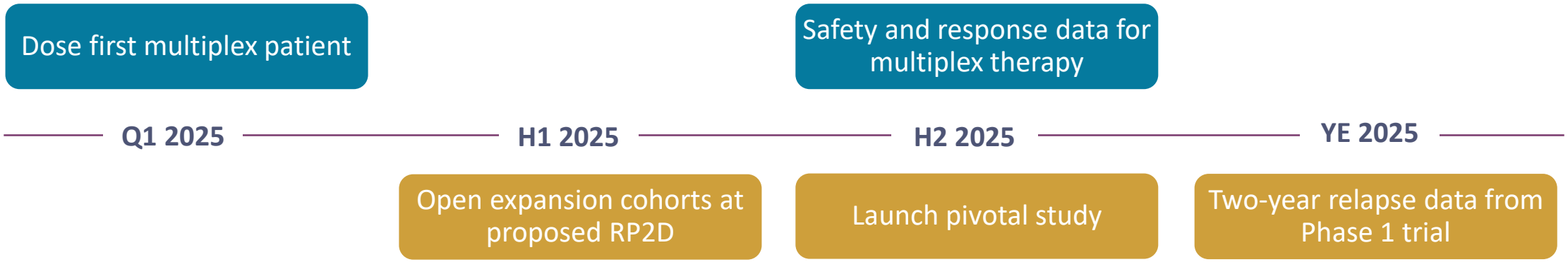


- High unmet need
- Evidence of T cell infiltration
- Clinical signal in early TCR-T trials
- Significant addressable patient population in second- and third-line treatment

Sources:
SEER; KOL research; Kantar; Chao X, Song X, Wu H, You Y, Wu M and Li L (2021) Selection of Treatment Regimens for Recurrent Cervical Cancer. Front. Oncol. 11:618485. doi: 10.3389/fonc.2021.618485

Steady value-generating data flow planned across clinical programs

Solid Tumor Program



Heme Program

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Fully integrated company positioned to deliver multiple clinical catalysts

Clinical-stage, next-generation TCR-T cell therapy company

- Rapidly-growing **clinical pipeline** addressing both **heme malignancies and solid tumors**
- **In-house GMP manufacturing** capabilities
- **Proprietary platform** enables rapid discovery of TCRs and targets for engineered T-cell therapies
- **Broad therapeutic potential** beyond oncology (e.g., autoimmune disease, infectious disease)

Expected Near-Term Clinical Data Catalysts

Heme: Enrollment using commercial manufacturing process at proposed recommended Phase 2 dose anticipated in the first half of 2025

- **Two-year Phase 1 relapse data expected by end of 2025**

Solid: First patient dosed with multiplex TCR-T therapy expected in the first quarter of 2025

- **Safety and response data for multiplex TCR-T therapy anticipated by end of 2025**

Strong Financial Position

Pro forma cash as of September 30, 2024 $316 million*

Cash runway into Q1 2027

* Includes $45M proceeds in Q4'24 from registered direct offering and debt refinancing

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THANK YOU