Company Presentation

November 2024

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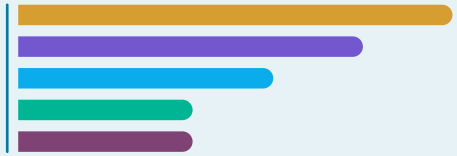
TSCAN THERAPEUTICS

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

Proprietary discovery platform

Rapid discovery of targets and TCRs

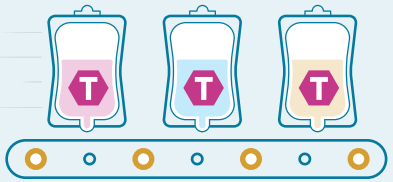
Rapidly-growing oncology pipeline



Clinical-phase programs in heme and solid tumor malignancies

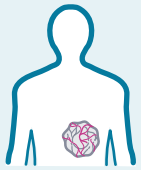
T-cell receptor (**TCR**)

In-house GMP manufacturing

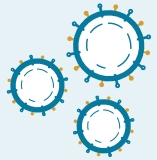


Transposon-based T cell engineering

Broad therapeutic potential



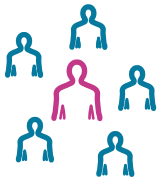
Oncology



Infectious disease

Autoimmune disease

TScan is building on the remarkable success of immunotherapy



Checkpoint & TIL therapy

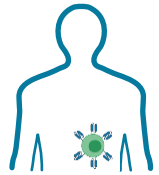
Rejuvenating and expanding a patient's existing T cells

- ✓ 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



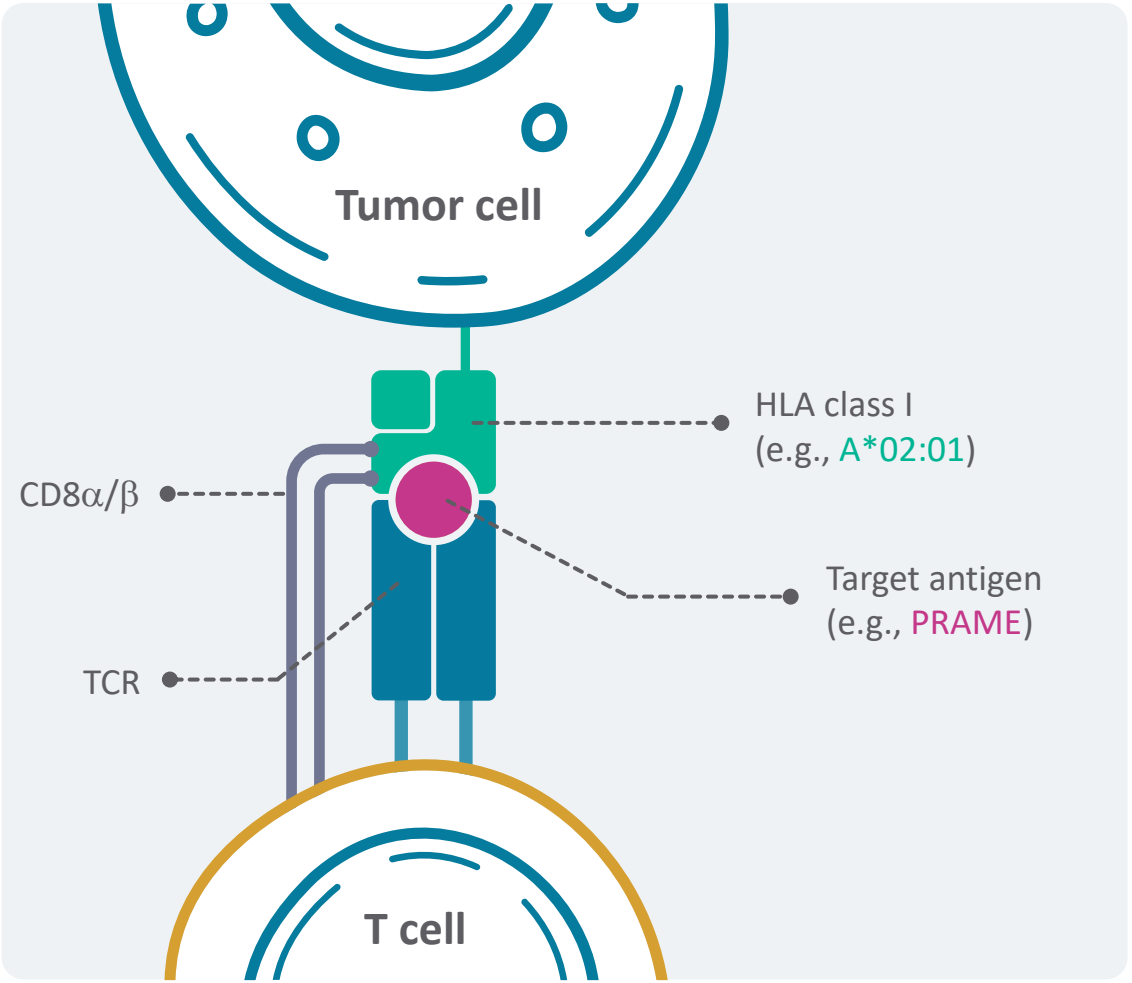
CAR-T therapy

Engineering T cells with a synthetic receptor

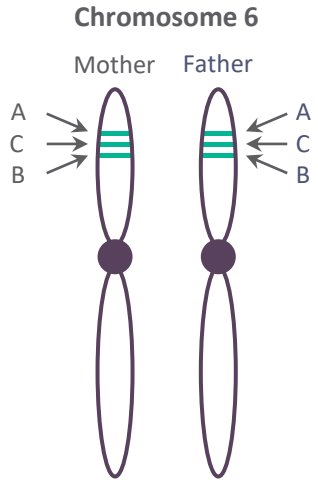
- ✗ Poor solid tumor penetration
- ✗ Limited to cell surface antigens
- ✓ T cells engineered with potent targeting receptors
- ✓ Proven efficacy in heme malignancies

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*

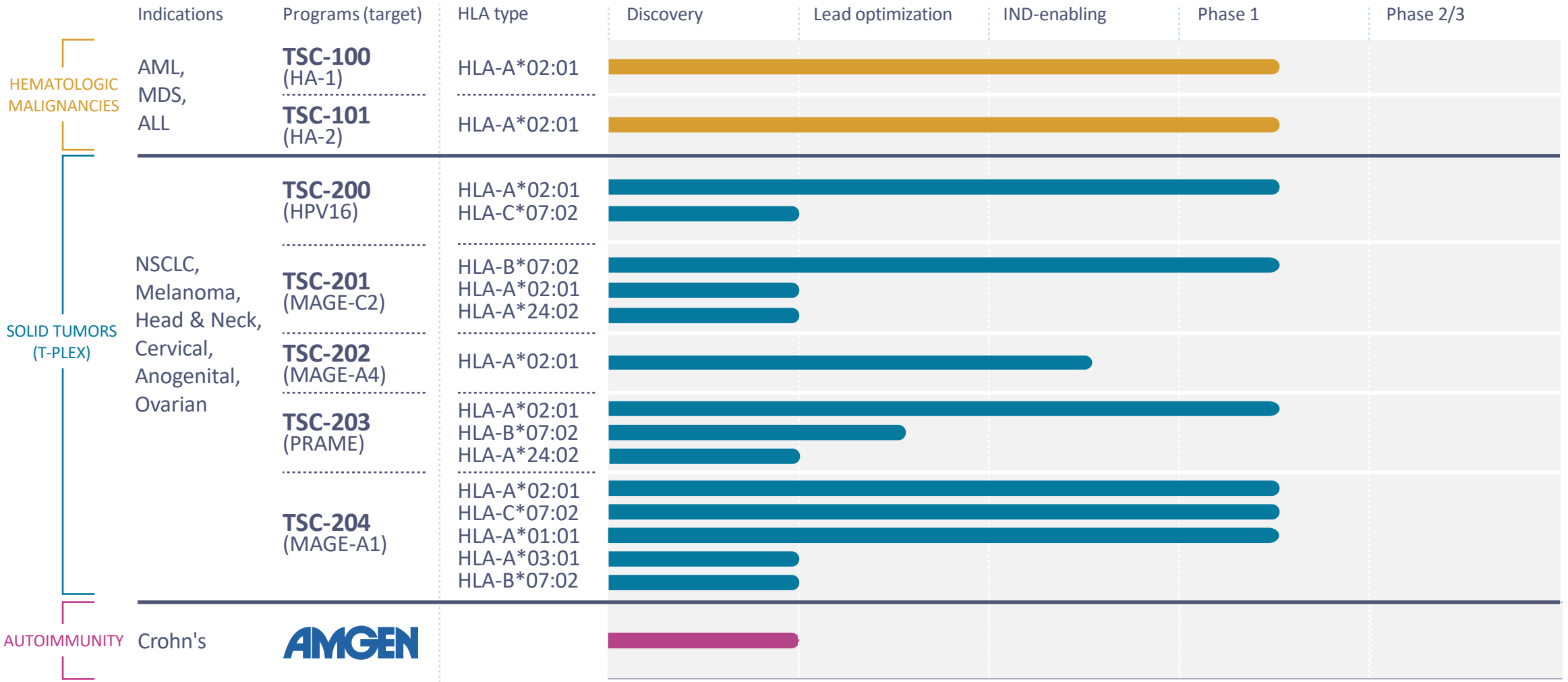
	% people positive for each HLA type		
HLA type	United States	Europe	Asia
A*02:01	42	47	19
A*01:01	24	26	14
A*03:01	22	25	7.0
B*07:02	20	21	8.1
C*07:02	24	23	24
A*24:02	17	19	37

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

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

*allelefrequencies.net

Platform delivers broad proprietary pipeline



TSCAN THERAPEUTICS

Heme Malignancies:

TSC-100

TSC-101

Targeting residual disease to prevent relapse in patients undergoing allogeneic HCT

TSCAN THERAPEUTICS

Relapse after hematopoietic cell transplant remains an unmet need

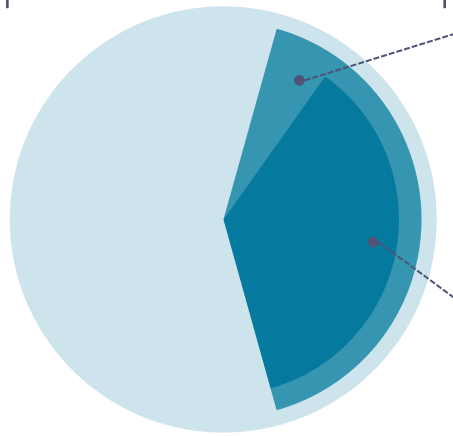
AML, MDS, some ALL is not addressed by CAR-T due to shared antigens with normal blood cells

~35,000
cases/year US

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

~7,350[1]
undergo transplant



>33% relapse within 2 years[2]
RIC range 38-44%
MAC range 26-30%

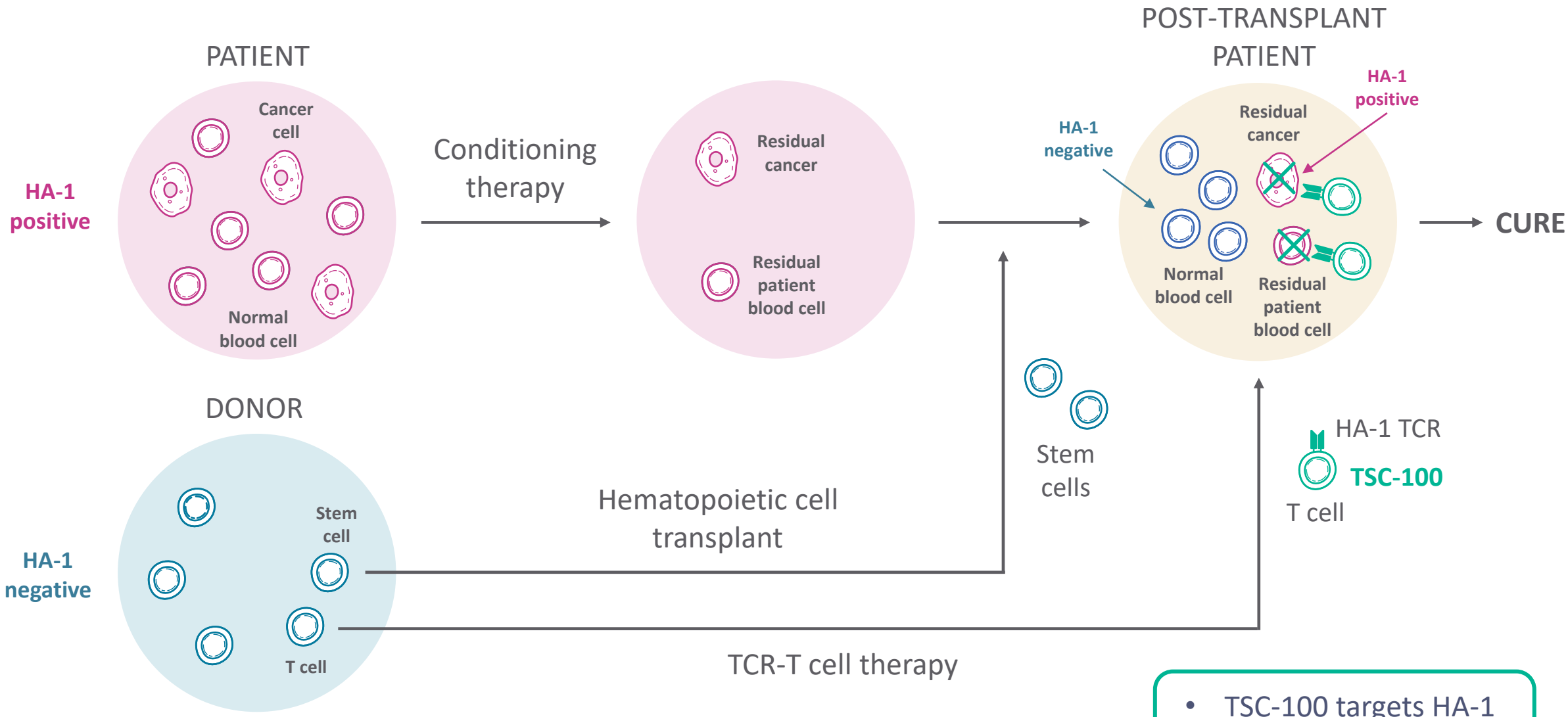
>90% mortality within 1 year[2]

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

1. CIBMTR summary statistics 2022, allogeneic transplants for malignant diseases in 2019 before the COVID-19 pandemic
2. CIBMTR analysis of AML, ALL, MDS allogeneic transplants with myeloablative (MAC) or reduced intensity conditioning (RIC) between 2017-2019 with 2-year follow-up; MAC relapse range 26-30%, RIC relapse range 38-44%

TSCAN THERAPEUTICS

TSC-100 and TSC-101 are engineered TCR-T cells designed to eliminate residual recipient cells and prevent relapse following HCT



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

TSCAN THERAPEUTICS

Multi-arm Phase 1 trial for TSC-100 & TSC-101 has reached highest dose level

AML, MDS, ALL undergoing haploidentical transplant with reduced intensity conditioning

Dose Level	Day 21	Day 61
1	5×10^6/kg	
2	5×10^6/kg	5×10^6/kg
3	5×10^6/kg	2×10^7/kg

Control Arm
(HLA-A*02:01 negative)

Transplant Alone

Treatment Arms
(HLA-A*02:01 positive[1])

Transplant + TSC-100 (HA-1 positive[2])

Transplant + TSC-101 (HA-2 positive[2])

Key endpoints

- Safety: adverse event profiles, GvHD rates/ grades
- Relapse rates: 6m, 1y, 2y
- Exploratory endpoints: donor chimerism, MRD

Expected relapse rates for HCT alone	
6 months	22%
1 year	33%
2 years	42%

CIBMTR analysis of RIC-haplo transplants from 2017-2019

[1] 42% of U.S. population
[2] >99% patients are either HA-1 or HA-2 positive

TSCAN THERAPEUTICS

Similar baseline and demographic characteristics between arms

N,%		TSC-100	TSC-101	All TSC-10X	Control
Patients Enrolled/Dosed		4	4	8	8
Age, median (range)		66 (52-73)	56 (52-66)	59 (52-73)	69 (23-74)
Sex, male (n,%)		3 (75%)	3 (75%)	6 (75%)	5 (63%)
Underlying Disease	AML	2	1	3	5
	ALL	1 (T-ALL)	2 (B-ALL)	3	0
	MDS	1	1	2	3
Mutations^	*TP53*	0	1	1	2
	FLT3	1	0	1	1
	IDH2	1	1	2	0
	ASXL1	2	1	3	1
	Other[#]	5	4	9	15
Pre-HCT MRD		3 (75%)	2 (50%)	5 (63%)	4 (50%)

^Relevant mutations documented pre-transplant. Patients may have had more than one mutation.

[#] *ALK, CUX1, Del5q, DNMT3A, EZH2, KRAS, Monosomy 7, NMP1, NRAS, RUNX1, SETB1, SRSF2, STAG2, TET2, Trisomy 8, WT1*

TSCAN THERAPEUTICS

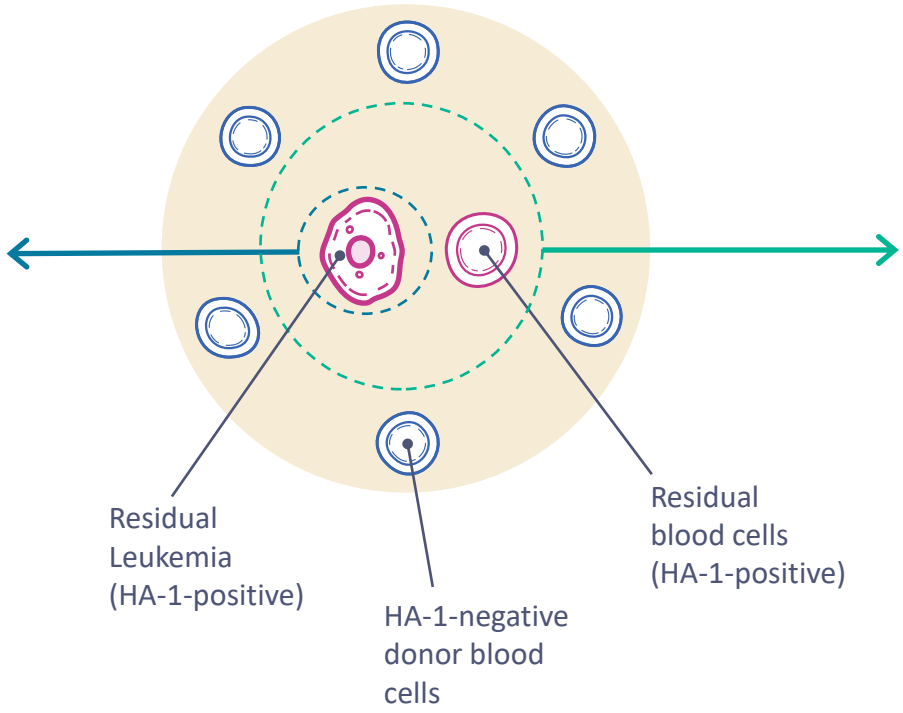
As of 12 Apr 2024

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]

Post-transplant Patient



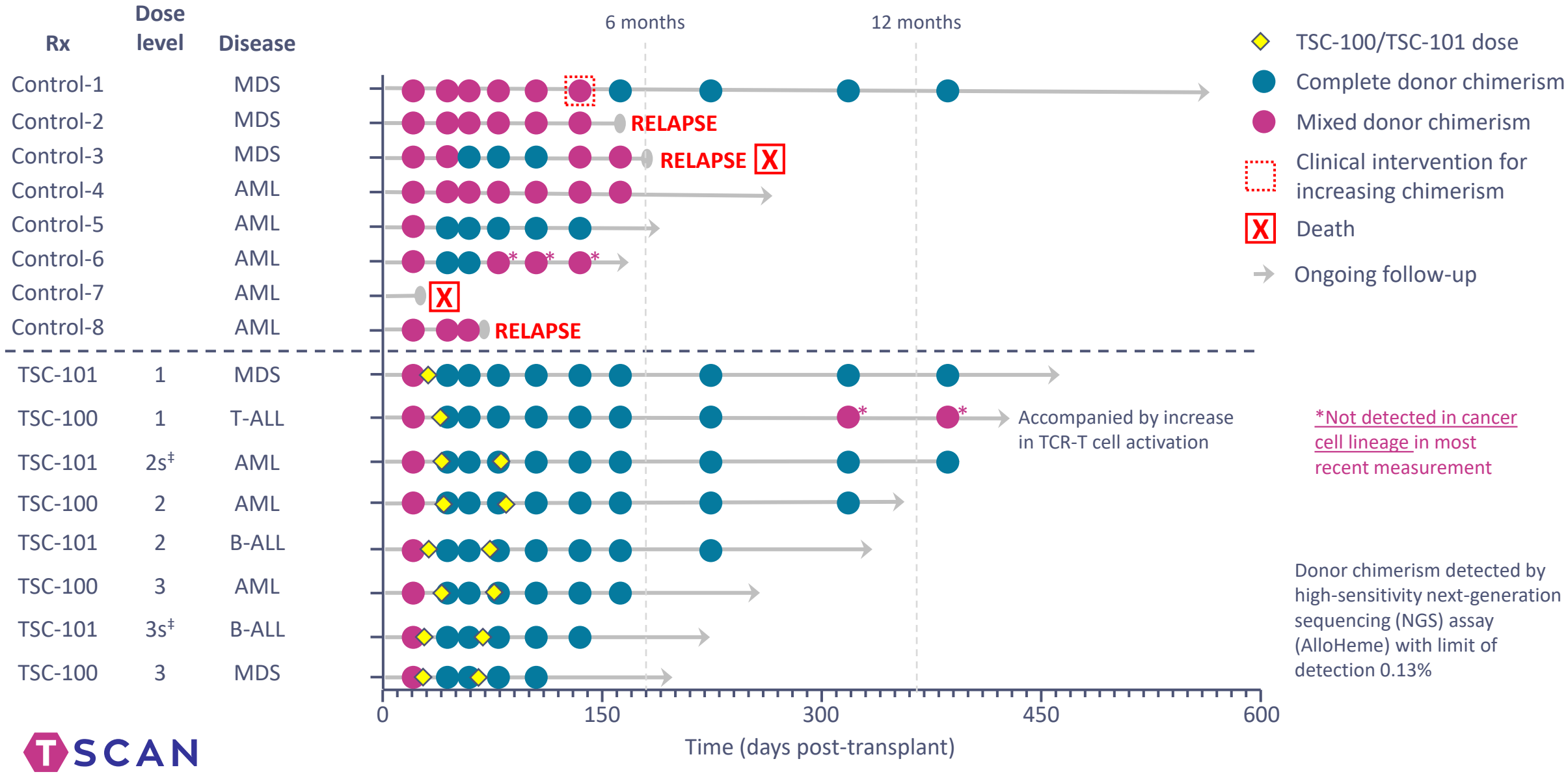
Donor Chimerism

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

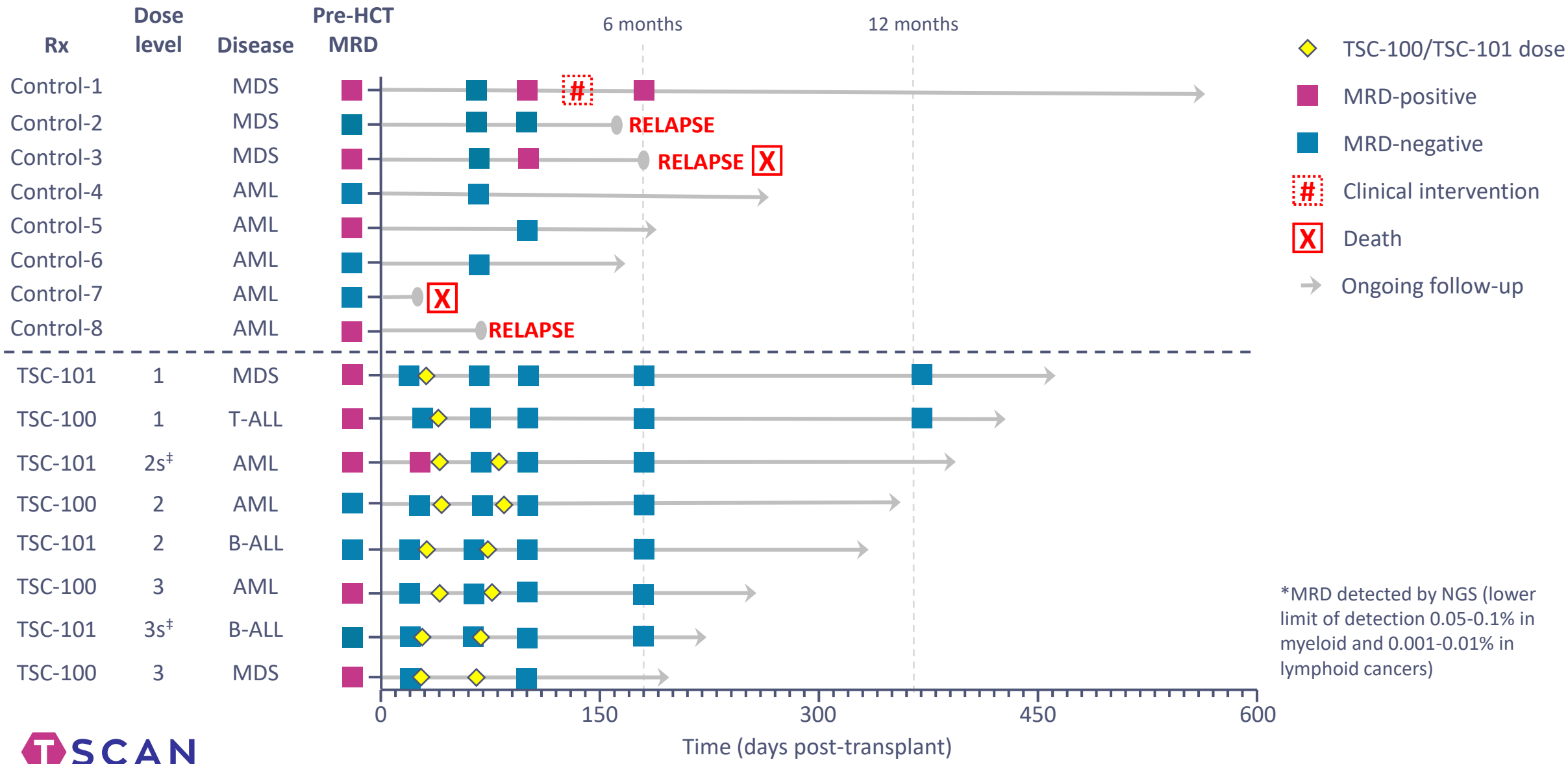
All 8 patients on the treatment arm remain relapse-free with no detectable cancer



Data cutoff May 21, 2024

‡Dose did not meet target dose criteria in supplemental cohorts

All treated patients to date achieved and maintained MRD negativity*



*MRD detected by NGS (lower limit of detection 0.05-0.1% in myeloid and 0.001-0.01% in lymphoid cancers)

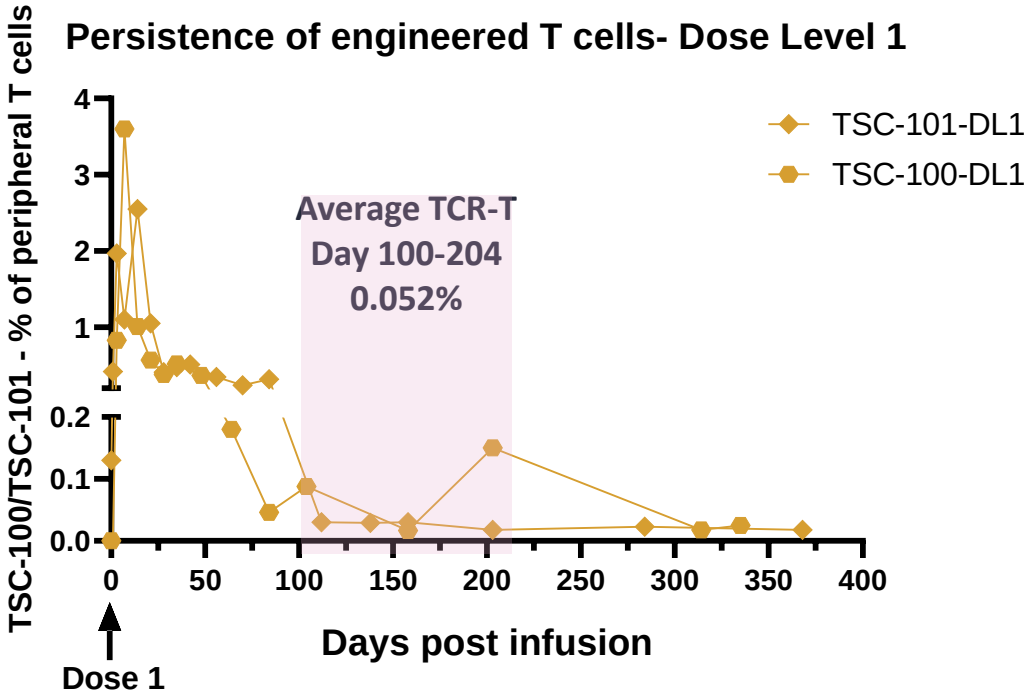
Data cutoff May 21, 2024

‡Dose did not meet target dose criteria in supplemental cohorts

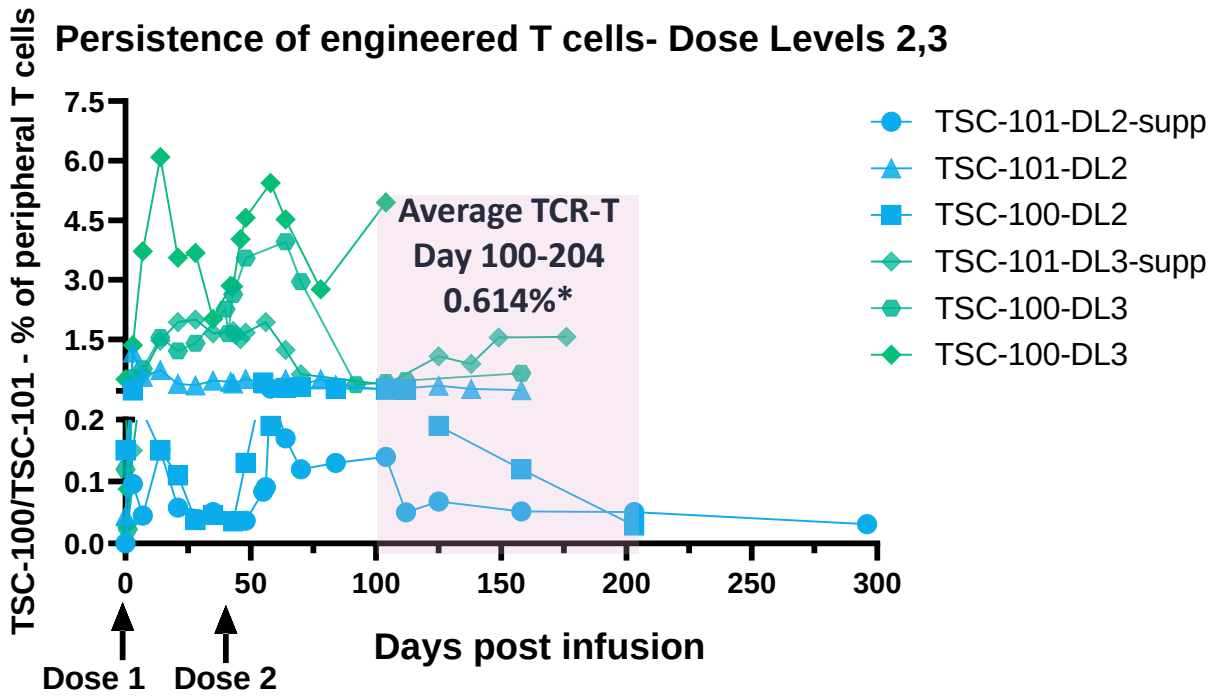
Repeat dosing resulted in increased persistence of circulating TCR-T cells

- TSC-100 and TSC-101 TCR-T cells detected in all patients at all time points to date

Single dose cohorts



Repeat dose cohorts



*Average TCR-T Day 100-204 DL3: 1.73%; DL2 and DL-supp: 0.22%

Data cutoff April 12, 2024

Serious adverse events were similar between treatment and control arms

Control-Arm Patient	Serious Adverse Event	Highest Grade*	Post-transplant Day	TSC Relatedness
Control 3	Cytokine release syndrome	2	+2	Not Applicable
Control 4	Neck pain	3	+53	Not Applicable
Control 2	Acute graft versus host disease in skin	3	+49	Not Applicable
	Acute graft versus host disease in gastrointestinal tract	3	+53	Not Applicable
	Pneumonia	3	+56	Not Applicable
Control 5	RSV Pneumonia	3	+28	Not Applicable
Control 7	Acute kidney injury, septic shock	5	+7	Not Applicable

*Grading by CTCAE v5.0 or MAGIC consortium grading for GvHD

See next slide for treatment-arm patients

Data cutoff April 12, 2024

Serious adverse events were similar between treatment and control arms

Treatment-arm Patient	Serious Adverse Event	Highest Grade*	Post-transplant Day	TSC Relatedness
TSC-100-DL3	Sepsis, respiratory failure	4	+9	Not applicable (pre-TSC)
TSC-100-DL2	Pyrexia	1	+136	Not related
TSC-100-DL3	Pericardial effusion#	4	+77	Not related
TSC-101-DL1	Acute graft versus host disease in gastrointestinal tract#, acute kidney injury	3	+49	Possibly related
	Adenovirus viremia, Pneumonia, Clostridium difficile infection	2	+71	Not Related
	Pyrexia	1	+148	Not Related
	Interstitial pneumonitis	2	+182	Not Related
	Pneumonia	3	+368	Not Related
	Pneumonia, pleural effusion	3	+400	Not Related
TSC-101-sDL2	HHV-6 reactivation	1	+21	Not applicable (pre-TSC)
	Influenza viremia, pneumonia, pleural effusion	3	+252	Not Related
	Urinary tract infection	2	+295	Not Related
TSC-101-sDL3	COVID-19, catheter infection	3	+95	Not Related
Donor	Acute pulmonary embolism	3	N/A	Not applicable

*Grading by CTCAE v5.0 or MAGIC consortium grading for GvHD
Research testing by flow cytometry or immunohistochemistry for TSC-100/101 markers did not find evidence of involvement

See previous slide for control-arm patients

Data cutoff April 12, 2024

Adverse events of special interest similar between treatment and control arms

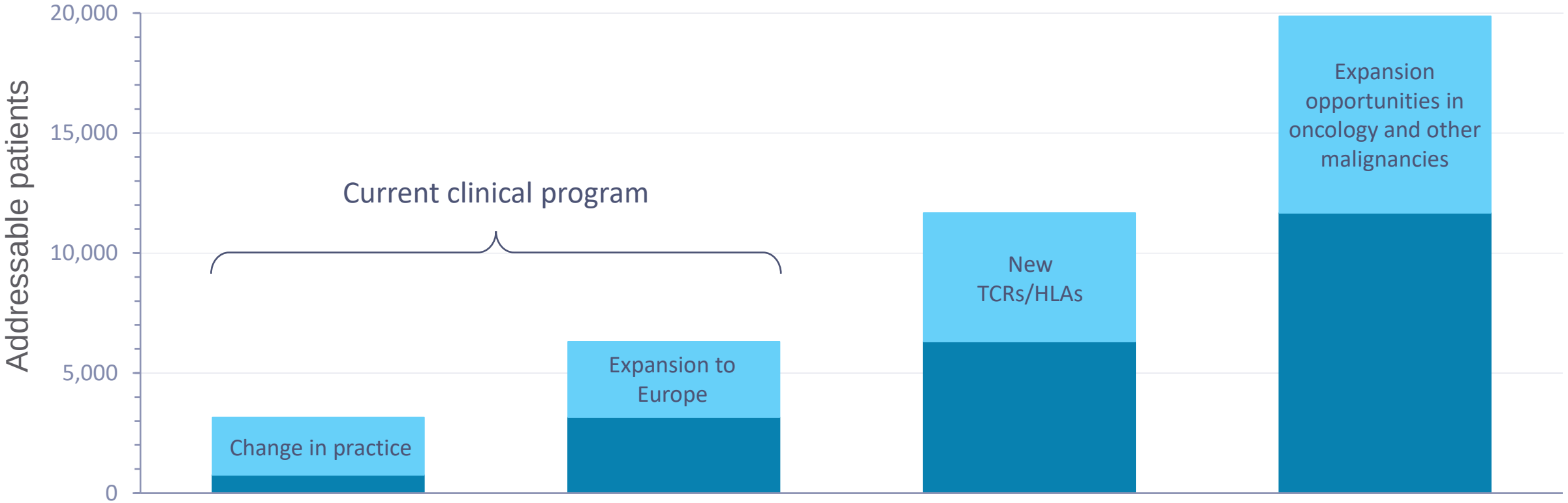
All cytokine release syndrome (CRS) events occurred before TSC-100/ TSC-101 treatment

Arm-Dose Level	Grade*	Adverse Event	HCT Day of Onset	Duration	TSC relatedness
TSC-100-DL2	Grade 1	CRS	+3	2 days	Not applicable (pre-TSC)
TSC-100-DL3	Grade 1	CRS	+3	3 days	Not applicable (pre-TSC)
TSC-101- DL2supp	Grade 2	CRS	+1	3 days	Not applicable (pre-TSC)
TSC-101-DL2	Grade 1	CRS	+1	5 days	Not applicable (pre-TSC)
TSC-101-sDL3	Grade 1	CRS	+1	3 days	Not applicable (pre-TSC)
Control 1	Grade 1	CRS	+2	3 days	Not applicable
Control 2	Grade 1	CRS	+3	2 days	Not applicable
Control 3	Grade 2	CRS	+2	2 days	Not applicable
Control 6	Grade 1	CRS	+1	3 days	Not applicable
TSC-100-DL1	Grade 1	Skin GvHD	+48	8 days	Possibly related
TSC-101-DL1	Grade 3	GI GvHD	+49	8 days	Possibly related
TSC-101-DL2supp	Grade 1	Skin GvHD	+43	3 days	Possibly related
TSC-101-DL2	Grade 1	Skin GvHD	+127	7 days	Possibly related
Control 2	Grade 3	GI GvHD	+53	18 days	Not applicable
Control 2	Grade 3	Skin GvHD	+49	12 days	Not applicable
Control 1	Grade 1	Skin GvHD	+180	Pending	Not applicable
Control 3	Grade 1	Skin GvHD	+131	>50 days (off study)	Not applicable

*MAGIC consortium grading for graft-versus host disease (GvHD); ASTCT grading for cytokine release syndrome (CRS)

Data cutoff April 12, 2024

Current program addresses sizable patient population, with several global and lifecycle management opportunities



- Increased adoption of haploidentical donors
- Increased use of more tolerable conditioning

- Increased eligibility of AML, MDS, ALL patients

- Enable transplant for relapsed, refractory heme malignancies
- Use as a conditioning regimen pre-transplant

Source: SEER, CIBMTR, ClearView analysis

Solid Tumors:

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

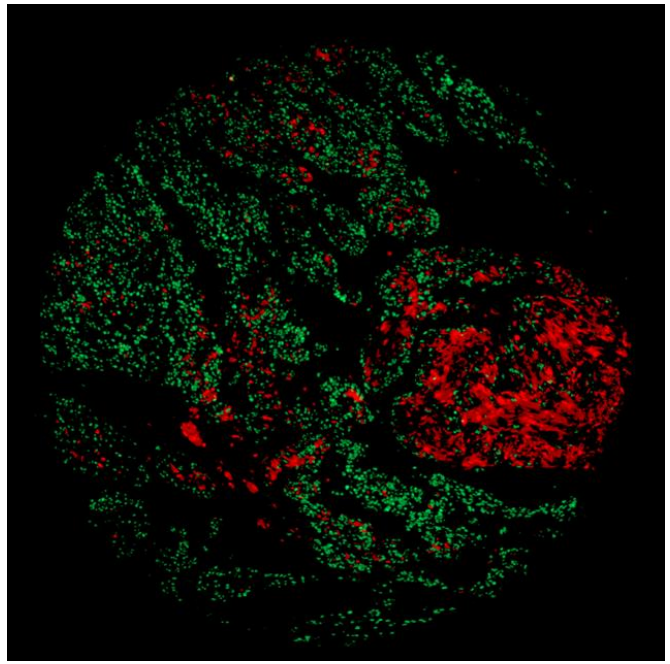
Developing multiplex TCR-T therapy to overcome tumor heterogeneity

TSCAN THERAPEUTICS

Target heterogeneity in solid tumors limits the efficacy of singleplex therapies

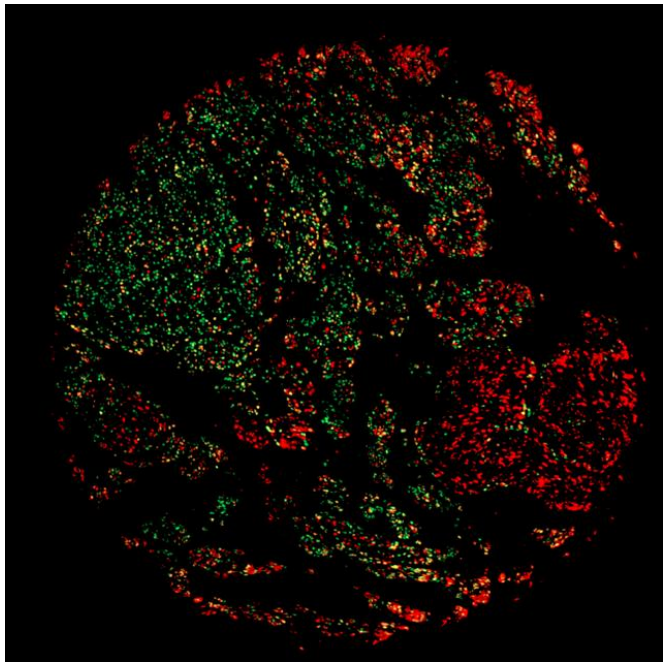
Melanoma

MAGE-C2 MAGE-A4



Melanoma

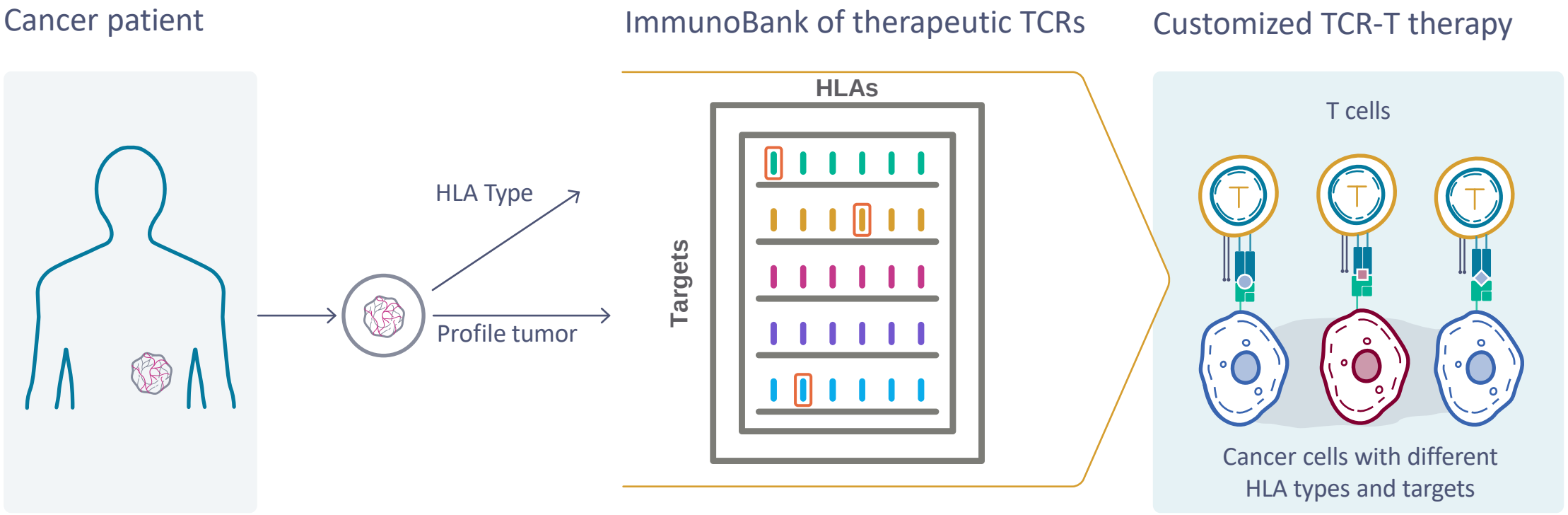
MAGE-C2 PRAME



- Treatment with a TCR-T against one target does not address the full tumor
- TCR-T therapy against multiple targets may be required improve efficacy and durability

Data on file

TScan is building an ImmunoBank of TCRs to enable enhanced, multiplexed TCR-T cell therapy

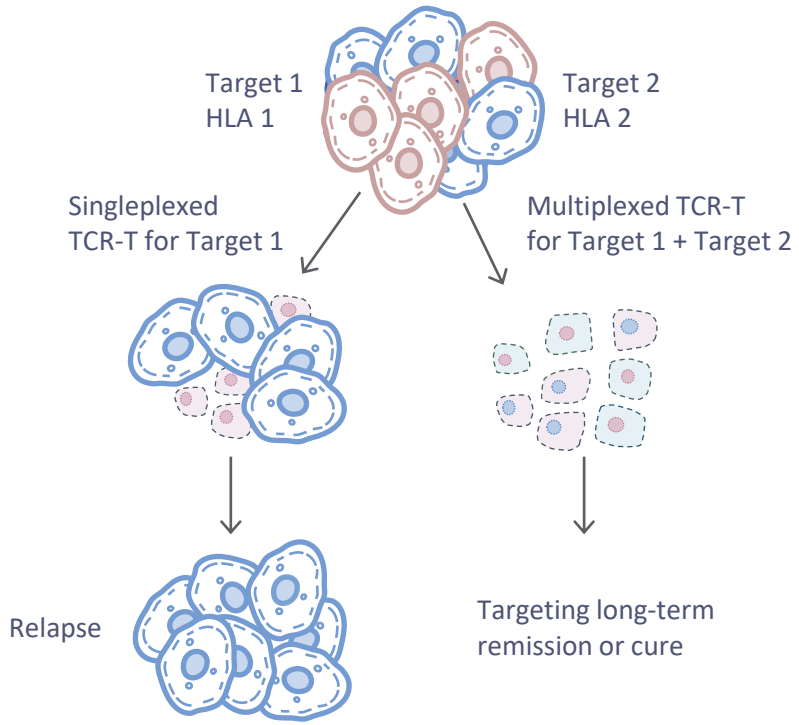


- Determine target and HLA expression in patient tumor
- Manufacture and administer customized, multiplexed TCR-T therapy

TSCAN THERAPEUTICS

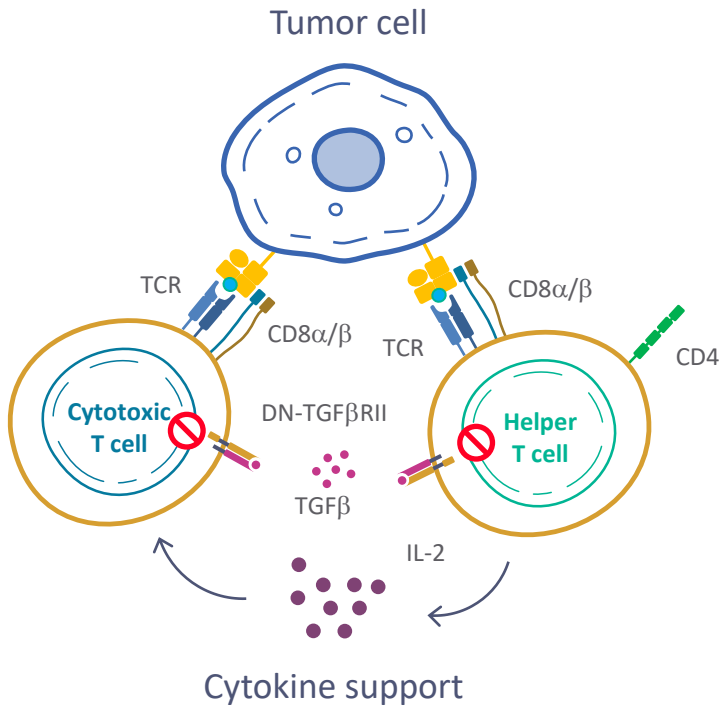
TScan's solution for inducing deep and durable responses

Multiplexed TCR-T to overcome target heterogeneity and HLA loss



- Treat patients with multiple TCR-Ts
- Prospectively select patients for target and HLA expression

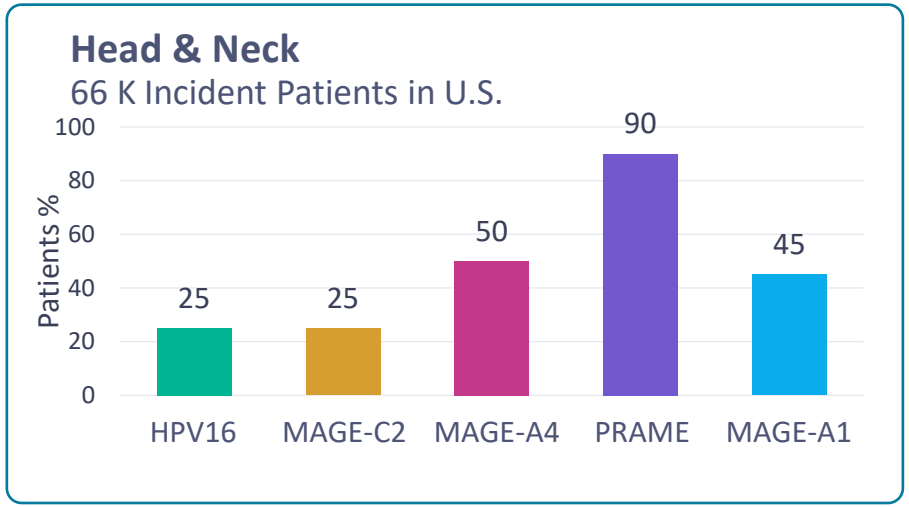
Enhanced TCR-T to combat the hostile tumor microenvironment

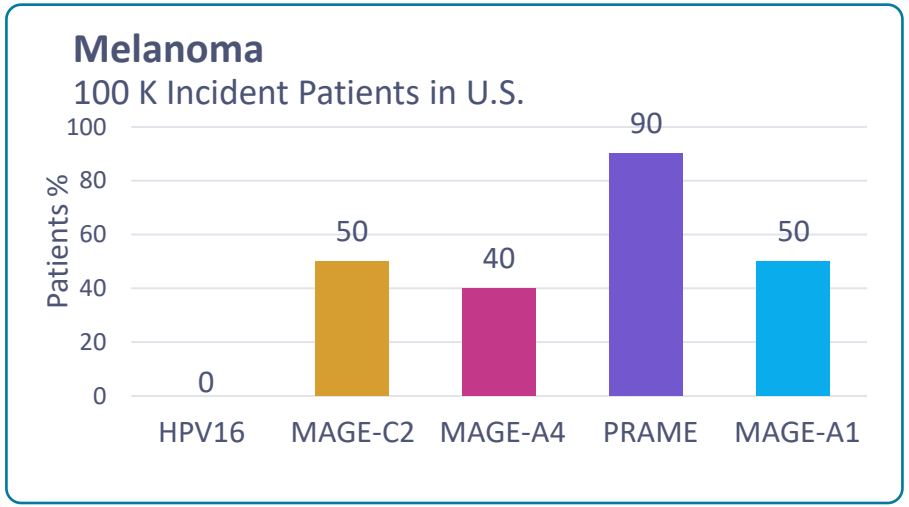


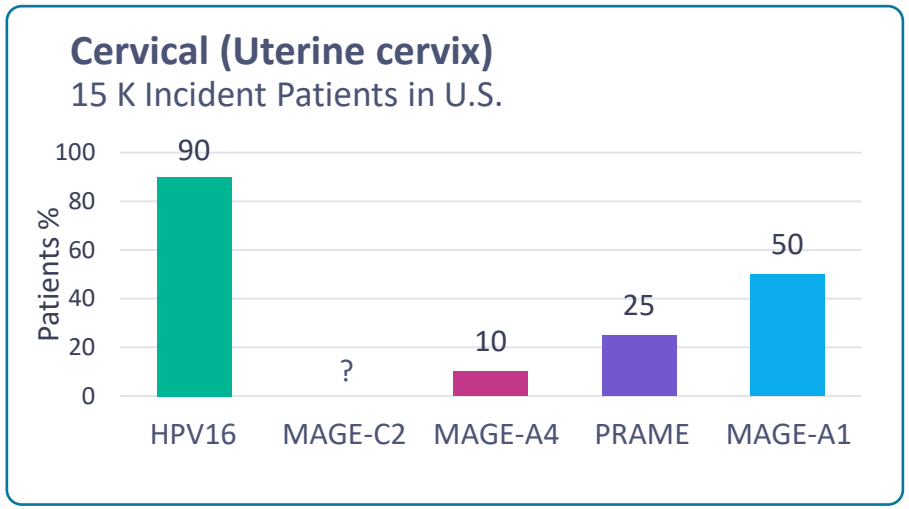
- Co-deliver CD8α/β to engage helper T-cells
- Co-deliver DN-TGFβRII to enhance T-cell expansion/persistence

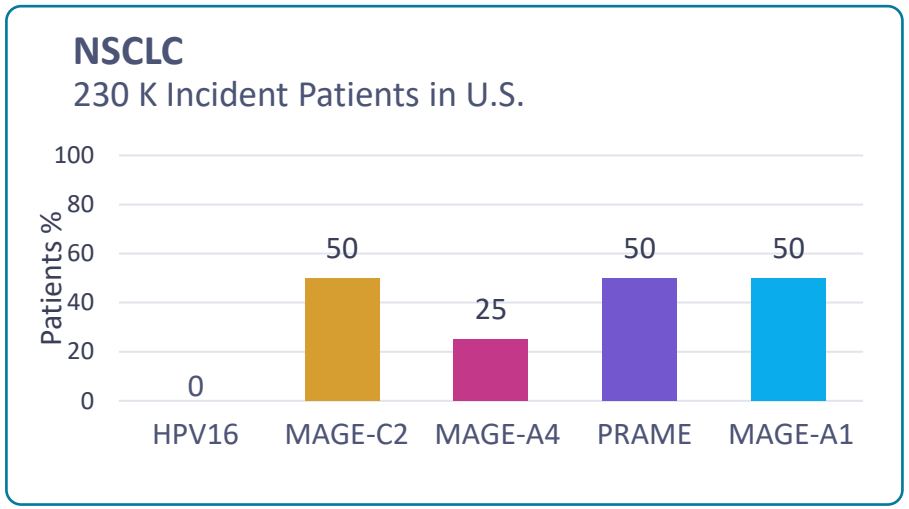
TSCAN THERAPEUTICS

Programs address targets frequently co-expressed in prevalent solid tumors



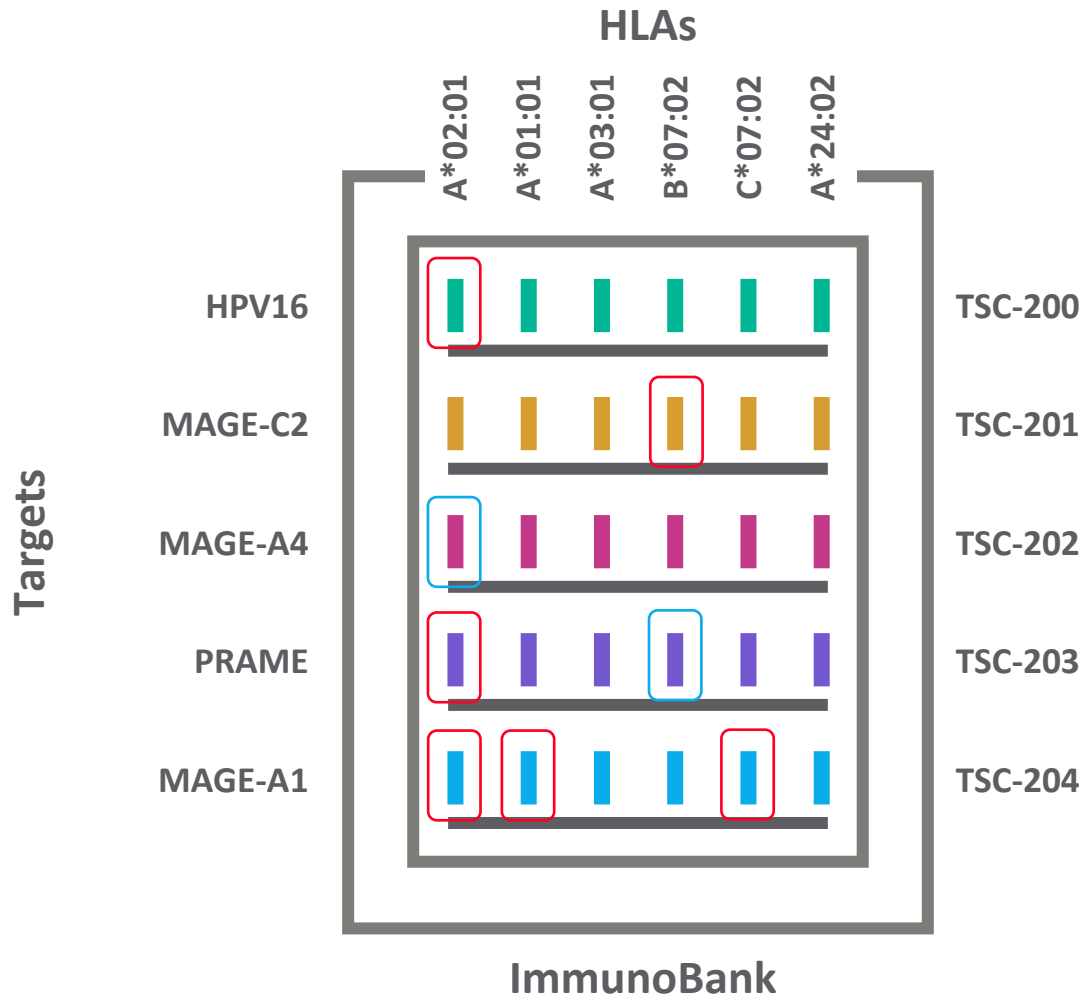






Source: American Cancer Society

TScan is rapidly filling the ImmunoBank to enable multiplexed TCR-T therapy in solid tumors



INDs

Cleared

Planned INDs

Currently INDs for 6 TCRs

INDs planned for this year

Expand the ImmunoBank through ongoing discovery

TSCAN THERAPEUTICS

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	0.5B	0.5B	0.5B	0.5B	0.5B
DL2	2B	2B	2B	2B	2B	2B
DL3	Any two TCR-Ts that have cleared DL2			T-Plex		
DL4	Any two TCR-Ts that have cleared DL3			T-Plex		

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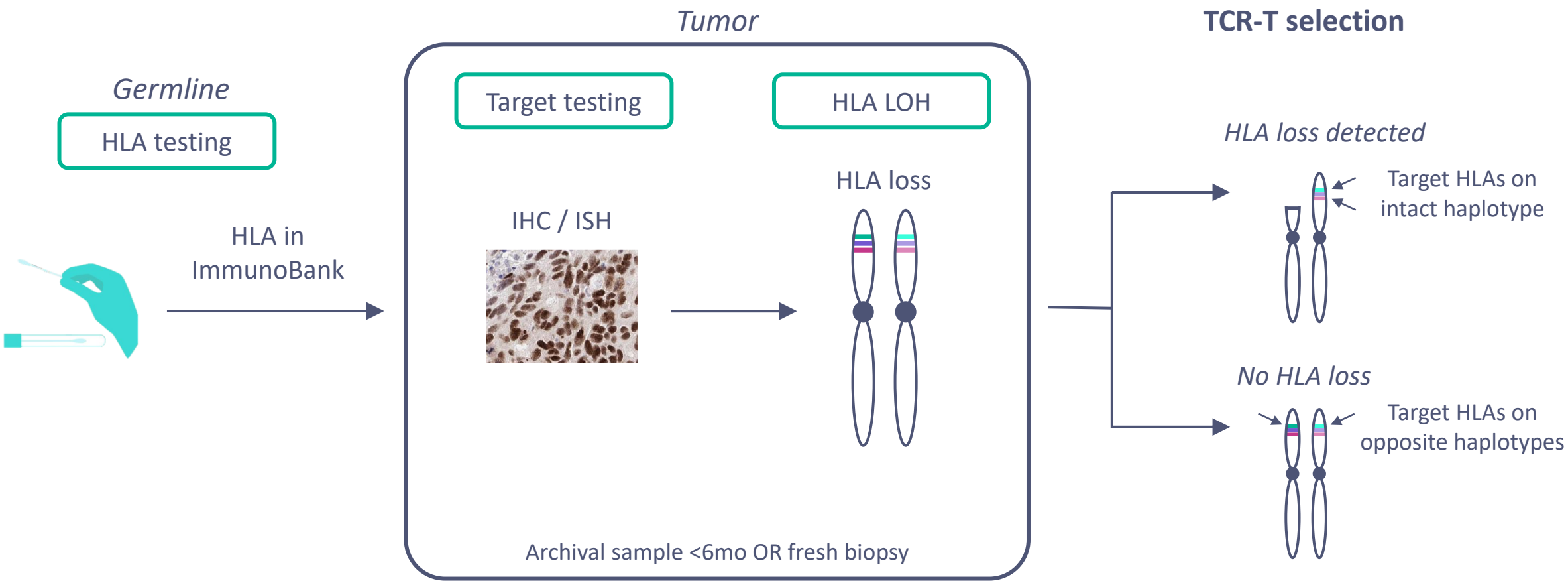
Prospectively selecting for target and HLA expression maximizes chance of success



Phase 1 solid tumor clinical study underway

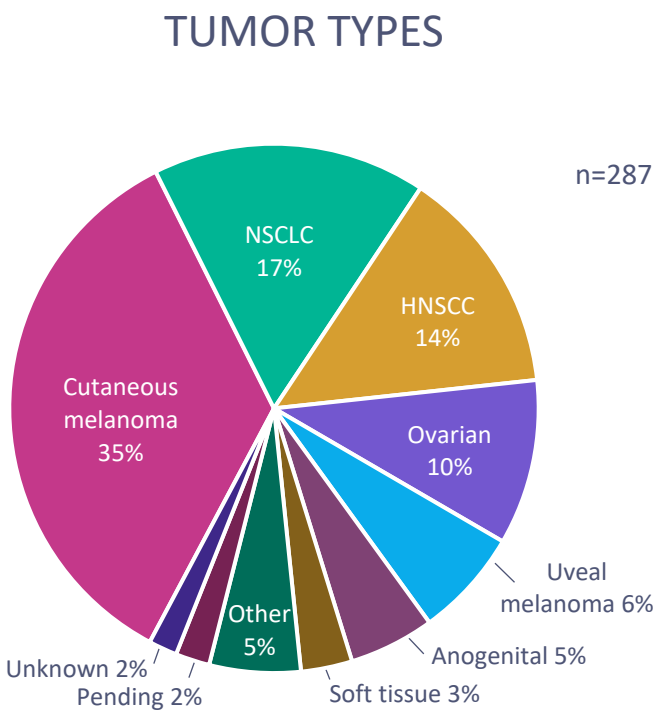
Screening protocol:

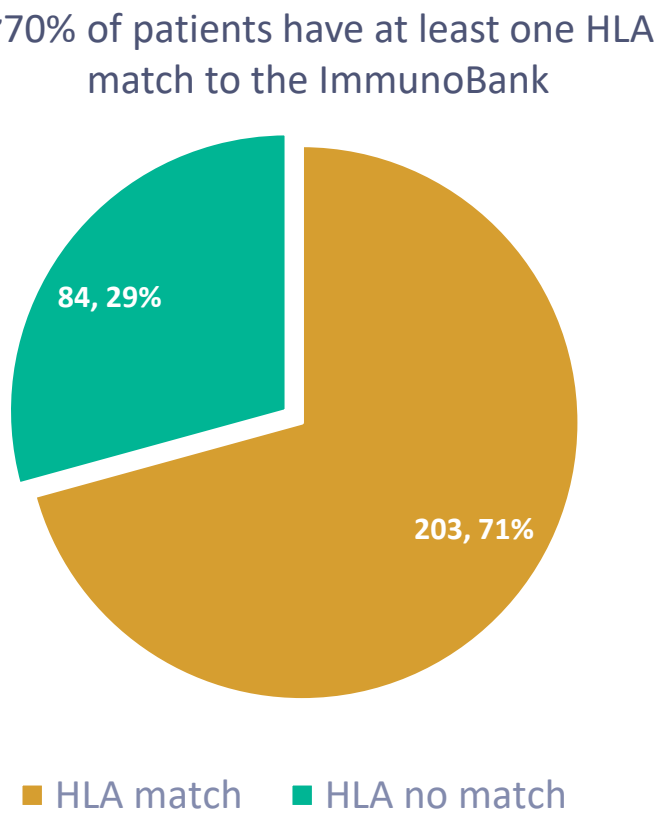
- Pre-screens patients for trial eligibility during standard-of-care therapy/before progression
- Germline HLA testing
- Archival tumor sample:
  - Tumor IHC
  - HLA LOH testing

Treatment protocol:

- Rapid enrollment
- Vein-to-vein time 25 days
- No IL-2 given
- Endpoints:
  - Primary: Safety
  - Secondary: ORR, DOR
  - Exploratory: T-cell persistence

Broad array of tumor types with ~70% matching to an HLA in the ImmunoBank

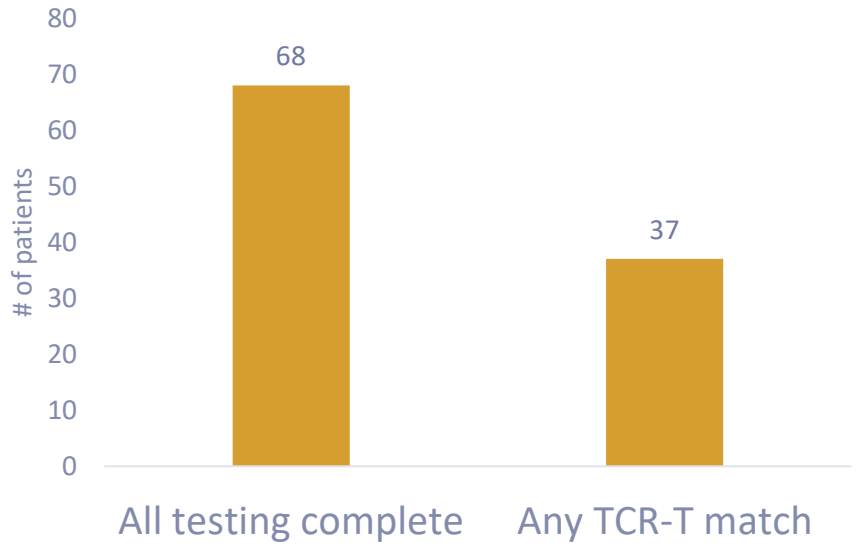




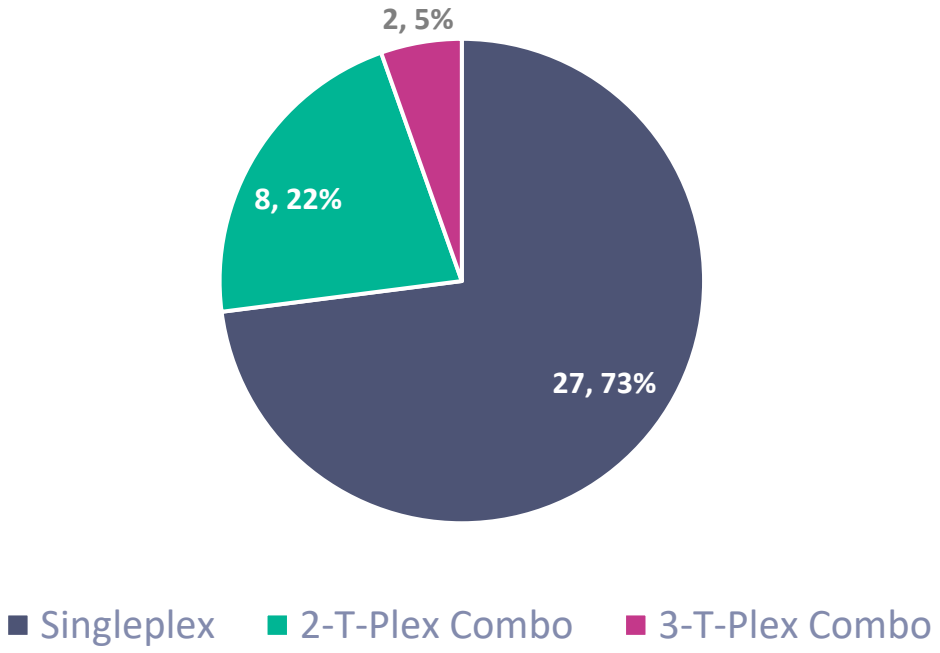
Presented at ASCO; data cut May 8, 2024

High percentage of patients have a TCR match for singleplex therapy and many would be eligible for T-Plex

>50% of patients with all testing completed have at least one TCR in ImmunoBank



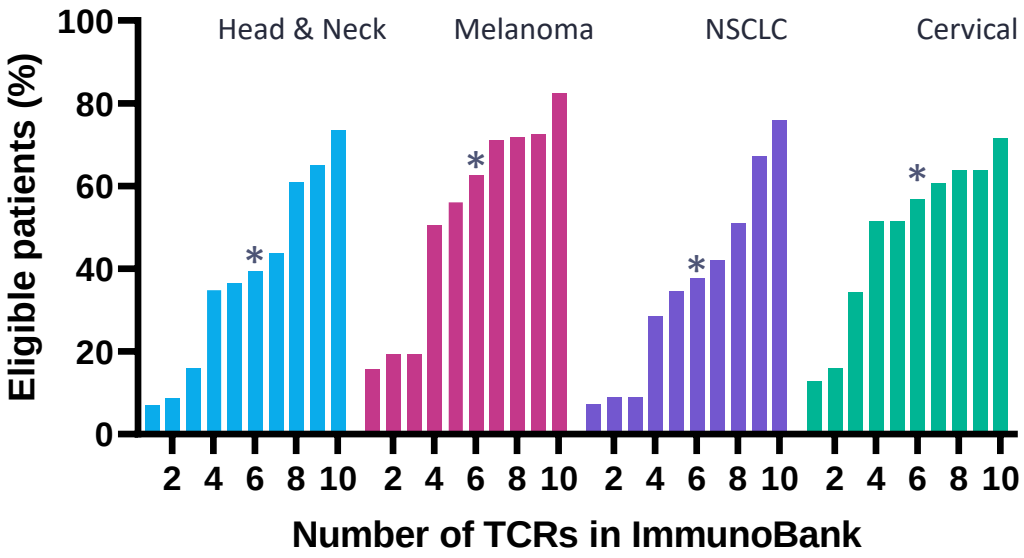
27% of patients with TCR-T would qualify for T-Plex



Presented at ASCO; data cut May 8, 2024

Patient eligibility expected to increase rapidly as ImmunoBank grows

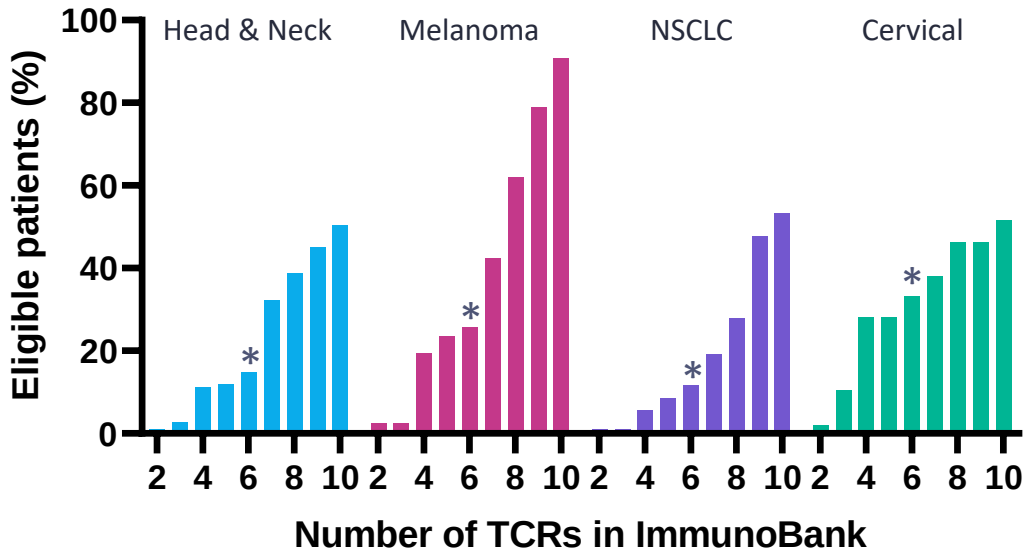
Singleplex therapy



Eligible patients include patients who are positive for at least 1 TCR-T in the ImmunoBank

*Current number of TCR-Ts in Immunobank

T-Plex



Eligible patients include patients who are positive for at least 2 TCR-Ts in the ImmunoBank.

*Current number of TCR-Ts in Immunobank

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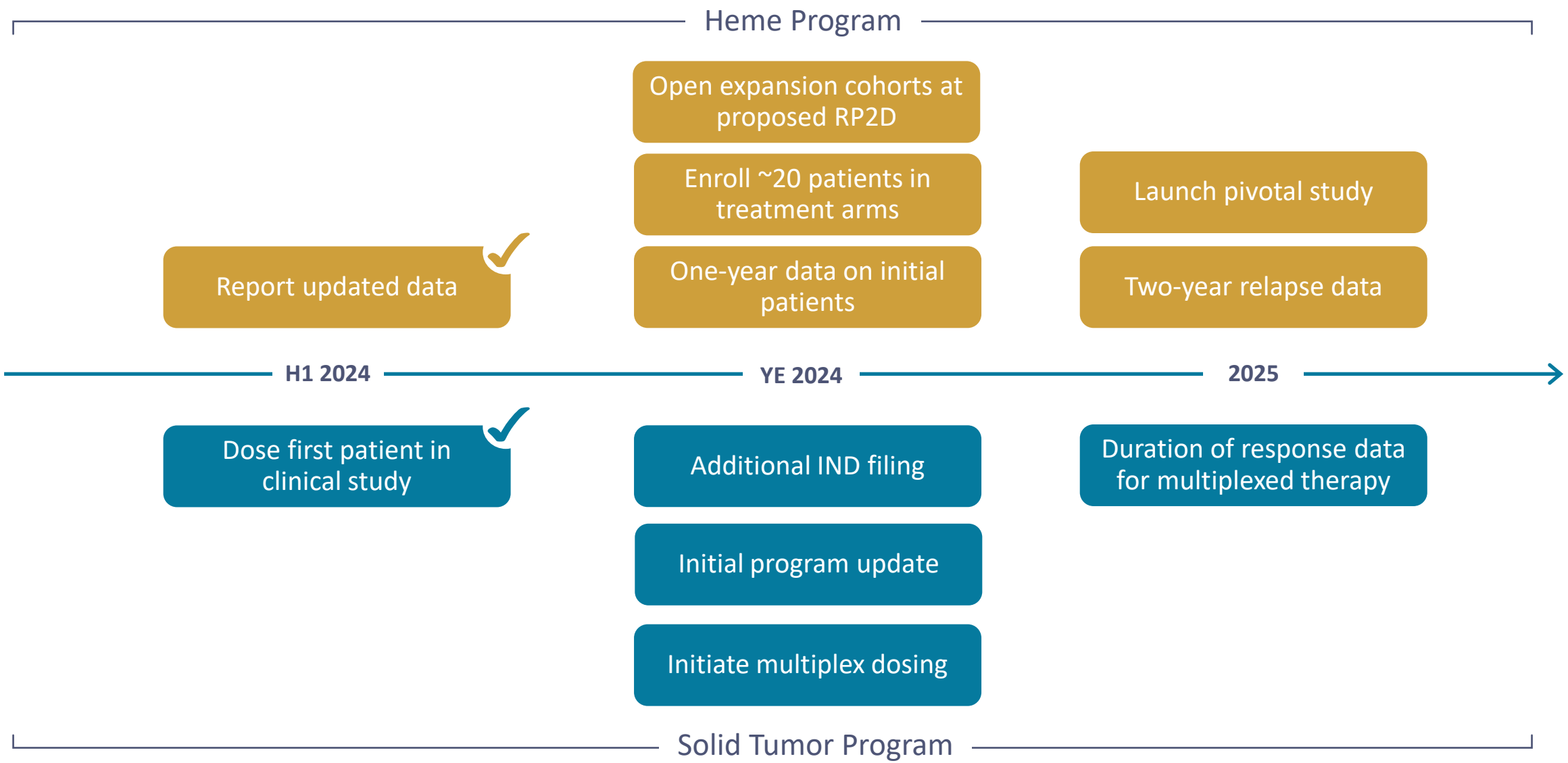
Steady value-generating data flow planned across clinical programs



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

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

Expected Near-Term Clinical Data Catalysts

Heme: All treatment-arm patients were relapse-free versus three relapses in the control arm*

- **One-year data on initial Phase 1 patients expected by end of 2024**

Solid: INDs cleared for six TCRs with regulatory path to multiplexing; first patient dosed May 2024

- **Initial program update expected by end of 2024**

Strong Financial Position

$271.1M as of September 30, 2024

expected to fund operations into **Q4 2026**

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*Data cut July 8, 2024

THANK YOU