Corporate Presentation

May 2026

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TSCAN THERAPEUTICS

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

Clinical

HEME MALIGNANCY PROGRAM

- Targets residual disease to prevent relapse in patients undergoing bone marrow transplant
- **Promising data for TSC-101:** Favorable **RFS and OS** compared to the control-arm with **no DLTs**. Durable responses with 100% (3/3) of patients 2-years post-HCT showing detectable TSC-101 cells and no evidence of disease[(1)]
- **Enrolled and treated >10 patients** in Cohort C of ALLOHA trial in which patients are being dosed with commercial-ready manufacturing process
- **Launch of pivotal study** expected in Q2 2026
- **INDs** for **TSC-102-A01** and **TSC-102-A03 cleared**, allowing for potential to double addressable market. Phase 1 study expected to begin in **H2 2026**

Preclinical

SOLID TUMOR PROGRAM

- Multiplex TCR-T therapy approach designed to overcome the heterogeneity of solid tumors
- Currently developing ***in vivo*-engineered multiplex TCR-T cell therapies** for solid tumors

Discovery

AUTOIMMUNITY PROGRAM

- TScan's proprietary platform enables the discovery of disease-driving autoantigens in areas of high unmet medical need
- **Targets identified for systemic sclerosis, ulcerative colitis, ankylosing spondylitis, and birdshot uveitis**[(2)]
- Ongoing collaboration with Amgen for target discovery in Crohn's disease

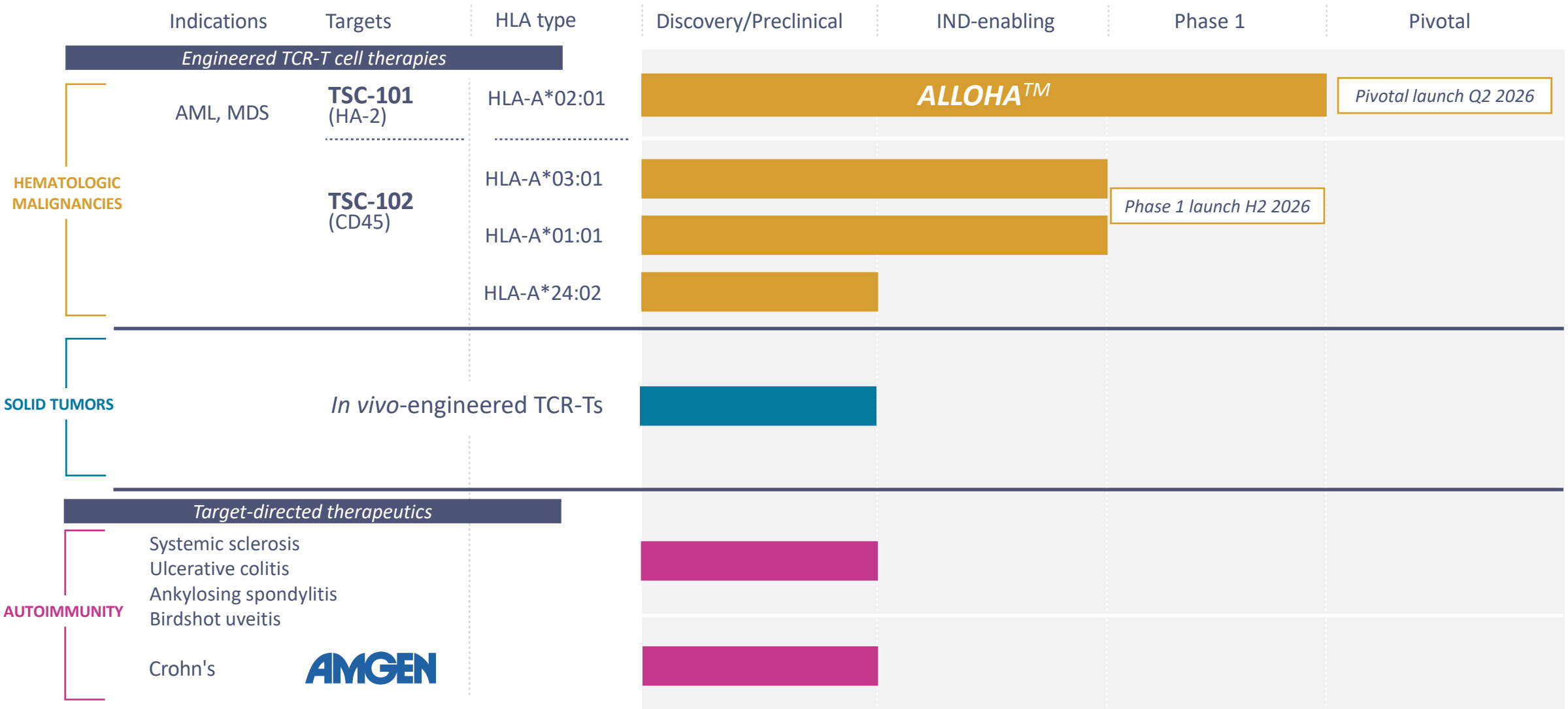
$128.1M as of March 31, 2026 funds operations into H2 2027

129.9M[(3)] total economic shares outstanding as of March 31, 2026

TSCAN THERAPEUTICS

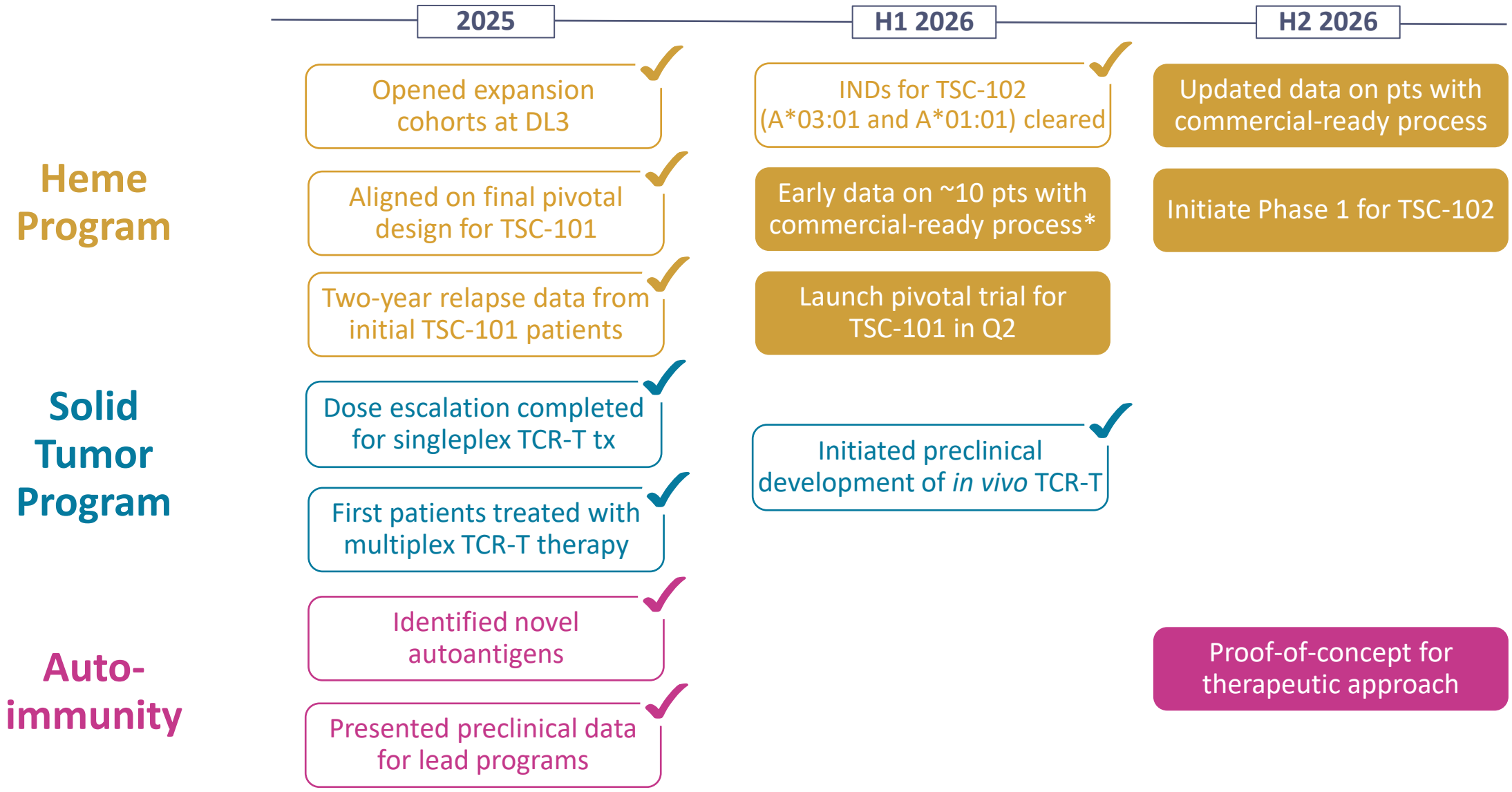
(1) Sept 19, 2025 data cut; Al-Malki et al, abstract ID 2391, presented at ASH Annual Meeting December 2025; (2) Weinheimer et al, and Pryor et al, presented at ACR Convergence 2025, abstracts 0888, 0997; (3) Includes 60,101,310 outstanding common shares plus 69,811,767 pre-funded warrants ; IND: investigational new drug

Advancing focused hematology pipeline with emerging preclinical programs



TSCAN THERAPEUTICS

2026 will be a transformational year for TScan



*Expansion cohort C

Heme Malignancies:

Targeting residual disease to prevent relapse in patients undergoing allogeneic HCT

TSCAN THERAPEUTICS

TScan is working to treat residual disease and prevent relapse in heme malignancies

Current Standard of Care	Allogeneic hematopoietic cell transplant (Allo-HCT) is the only potential cure for patients with AML and MDS
Unmet Medical Need	38-44% of patients relapse within two years following Allo-HCT with reduced intensity conditioning (RIC)*
TScan Approach	TCR-T cell therapy targeting antigens on patient cells, but not donor cells, to prevent relapse after transplant

TSC-101 is a TCR-T cell therapy designed to **eliminate residual cancer** and **prevent relapse** following Allo-HCT in HLA-A*02:01-positive patients

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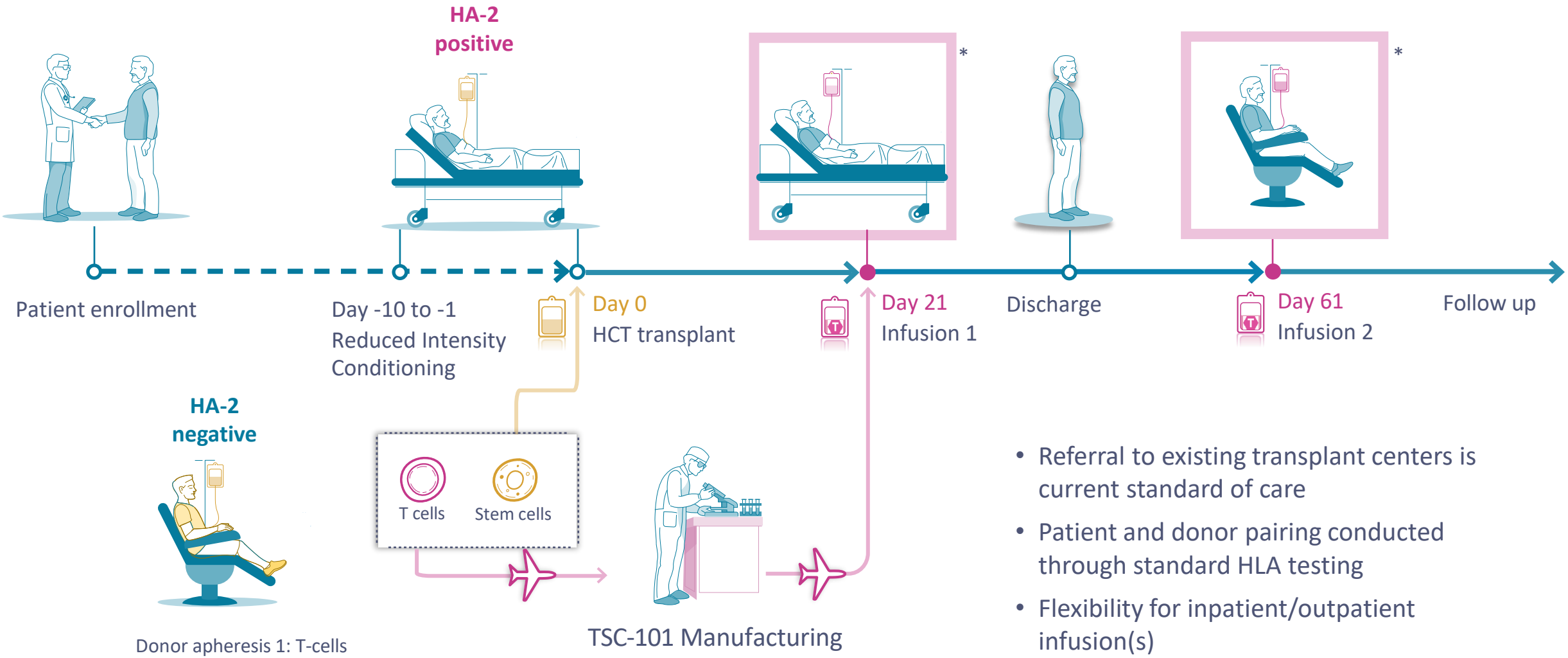
* CIBMTR analysis of AML, ALL, MDS allogeneic transplants with reduced intensity conditioning (RIC) between 2017-2019 with 2-year follow-up

TSC-101 is incorporated seamlessly into current transplant journey



- Referral to existing transplant centers is current standard of care
- Patient and donor pairing conducted through standard HLA testing
- Flexibility for inpatient/outpatient infusion(s)

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* Infusion 1 & 2 site of care (inpatient vs outpatient) determined by administering physician. Infusion 1 may be given upon engraftment and between days 14-35 post transplant, infusion 2 would be administered about 40 days after infusion 1.

TSC-101 could generate $1 billion+ annually at peak penetration in the U.S.

Addressable U.S. Patient Population at Launch

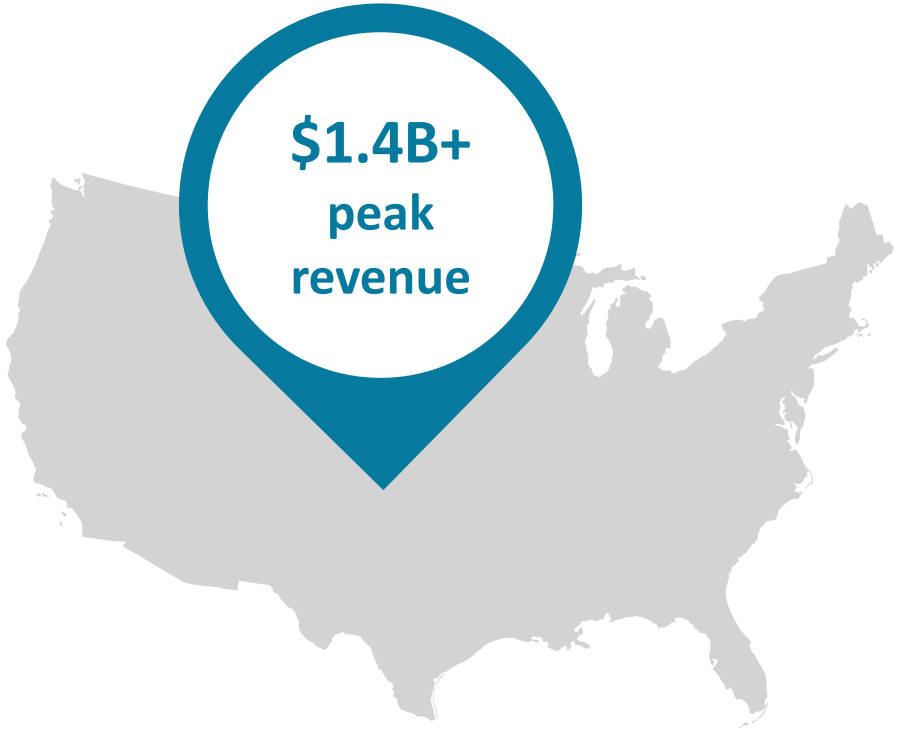
6,200 AML/MDS patients undergoing Allo HCT

2,600 HLA-A*02:01 positive patients (42%)

~2,100 with A*02-negative donor (80%)

2.1k addressable U.S. patients at launch

Requires transplant with reduced intensity conditioning and haplo/MMUD donor



Price benchmarked to current cell therapies

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Sources: CIBMTR, analyses from NMDP, allelefrequencies.net; Note: Addressable patient estimates account for HLA-eligibility (e.g., 42% HLA-A*02:01+ in the U.S.), ability to identify an appropriate haploidentical and/or MMUD donor, and future preference for RIC over MAC and use of haplo/MMUD transplants over MUD to enable TSC-101 eligibility. MUD: matched unrelated donor; MMUD: mismatched unrelated donor.

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

	TSC-101	TSC-102-A03	TSC-102-A01	TSC-102-A24	
HLA restriction:	A*02:01	A*03:01	A*01:01	A*24:02	HLA Total
U.S.	2.1k (42%)	1.1k (22%)	1.2k (24%)	800 (17%)	3.9k (~78%)
EU	3.9k (47%)	1.8k (25%)	2.0k (26%)	1.4k (19%)	6.8k (~83%)
APAC	1.5k (19%)	550 (7%)	1.1k (14%)	3.0k (37%)	4.0k (~50%)
Global Total	7.7k	3.5k	4.3k	5.2k	15.1k

TSC-101 targets ~45% of US and EU populations

Addition of HLA-A*03:01 and HLA-A*01:01 TCR-Ts expands U.S. and EU markets

Addition of an HLA-A*24:02 TCR-T unlocks broader APAC market

Sources: Allelefrequencies.net; Note: Patients can be positive for multiple HLA types.

Expansion opportunities for the program provide a way to reach about 20k AML and MDS patients in North America, Europe, and APAC

Capturing an expanding treatment landscape:

Expansion driven by launch of products for additional HLA types.* Plan to initiate Phase 1 for TSC-102-A01 and TSC-102-A03 in 2H 2026

Additional patient populations (e.g., relapse refractory patients, other indications) may become addressable with a proven safe and effective relapse prevention strategy

Source: SEER, CIBMTR, EBMT, APBMT, ClearView analysis; * Additional HLA types include A*03:01, A*01:01, and A*24:02

Heme Clinical Development Strategy

Targeting residual disease to prevent relapse in patients undergoing allogeneic HCT

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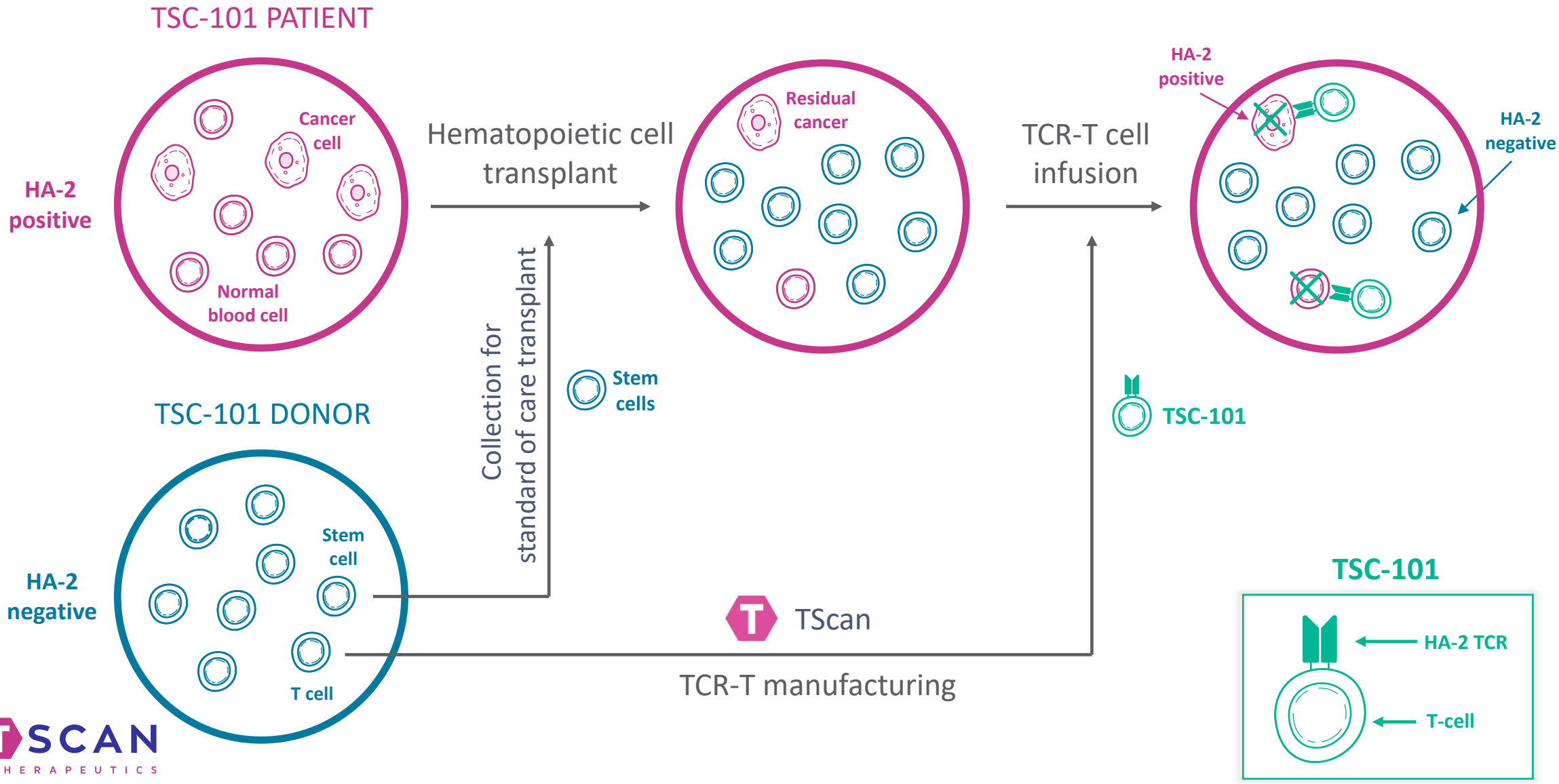
TSC-101 is a TCR-T cell therapy designed to eliminate residual cancer and prevent relapse following Allo-HCT



ALLOHA™, a Phase 1 trial evaluating TSC-101 in patients undergoing allo-HCT

Study design

- Multi-arm, biologically-assigned control arm
- Escalating dose regimen of up to two doses of TSC-101 in patients with AML, ALL, and MDS following HCT from a haploidentical or mismatched unrelated donor

Key endpoints

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

Patients are generally well balanced across the treatment and control arms

		TSC-101	Control
Enrolled Subjects		23	19
Evaluable Subjects*		19 (100%)	18 (100%)
Median Time from HCT, months		13.4 (4-33)	16.1 (1-36)
Age, Median (Range)		65 (52-74)	66 (23-77)
Sex, Male %)		13 (68%)	9 (50%)
Underlying Disease	ALL	2 (11%)	1 (6%)
	AML	13 (68%)	11 (61%)
	MDS	4 (21%)	6 (33%)
Genetics/ cytogenetics	**TP53 mutated**	**6 (32%)**	**2 (11%)**
	Adverse Risk**	13 (68%)	11 (61%)
Pre-HCT MRD Positive		13 (68%)	8 (44%)
MRD positive or adverse risk genetics		**15 (79%)**	**13 (72%)**
Clinical Status at time of HCT			
CR1		9 (47%)	12 (67%)
CR2		2 (11%)	1 (6%)
MLFS		5 (27%)	0 (0%)
Hematologic improvement		1 (5%)	0 (0%)
PR		1 (5%)	1 (6%)
Untreated		1 (5%)	1 (6%)
Other status		0 (0%)	3 (17%)

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ClinicalTrials.gov identifier: NCT05473910; Sept 19, 2025 data cut; Al-Malki et al, abstract ID 2391, presented at ASH Annual Meeting December 2025; *Subjects on the treatment arm who received ≥1 infusion of TSC-101 and on the control arm who reached Day 21; **Adverse risk is defined as having either an IPSS-M mutation (MDS) or ELN high risk genetics or cytogenetics (AML)

TSC-101 is well tolerated with no dose-limiting toxicity

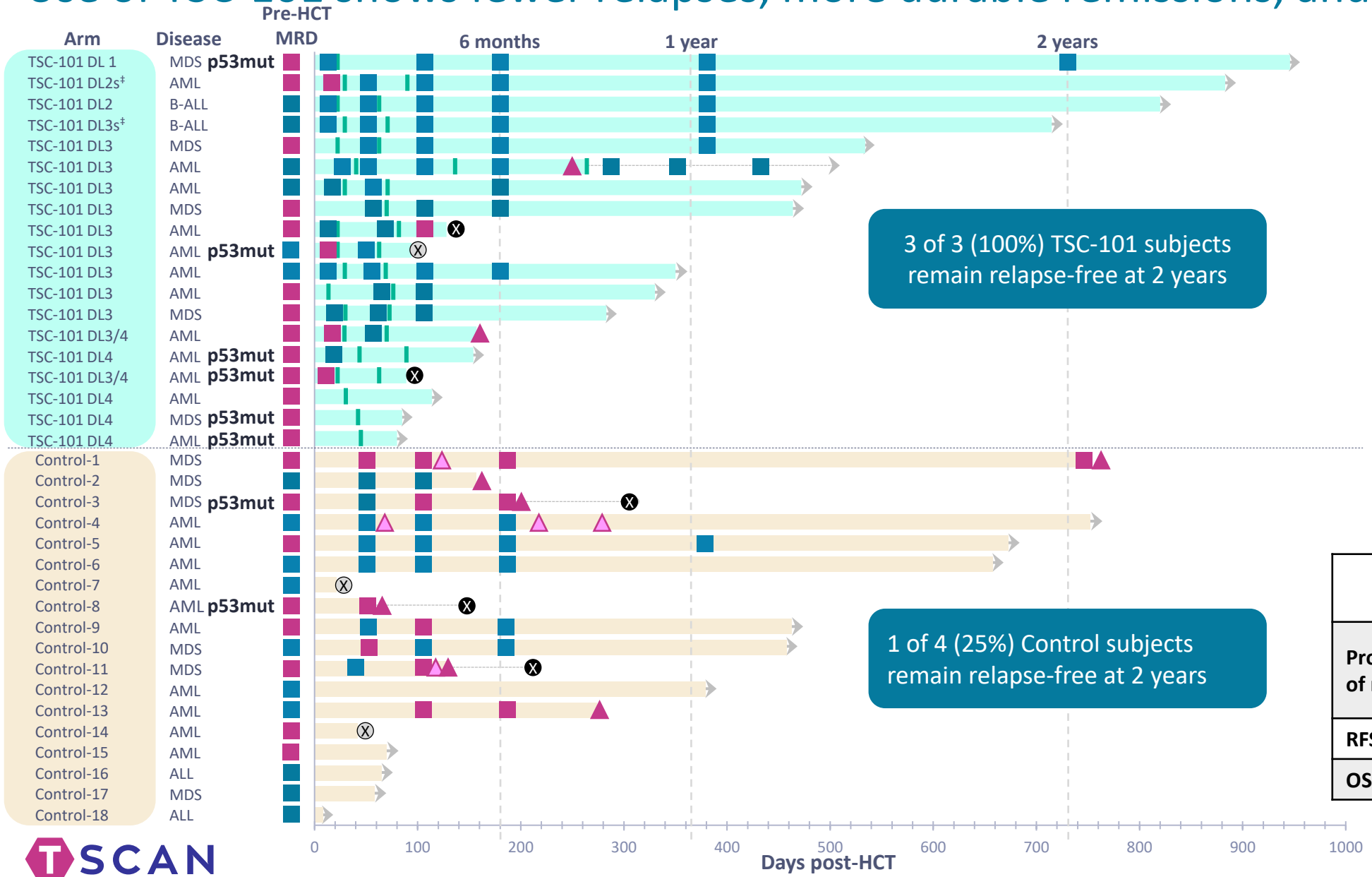
	TSC-101 n=19	Control n=18
Treatment-emergent aGvHD (MAGIC)	12 (63%)	10 (56%)
Grade I	8 (42%)	5 (28%)
Grade II	3 (16%)	4 (22%)
Grade III	1 (5%)	1 (6%)
Grade IV	0 (0%)	0 (0%)
Any Treatment-emergent cGvHD (NIH)	1 (5%)	2 (11%)
Mild	1 (5%)	1 (6%)
Moderate	0 (0%)	1 (6%)
Severe	0 (0%)	0 (0%)
Any CRS	14 (74%)	7 (39%)
Grade 1 - 2	14 (74%)	6 (33%)
Grade 3 - 4	0 (0%)	1 (6%)
Treatment-emergent CRS	3 (16%)	0 (0%)
Grade 1 - 2	3 (16%)	0 (0%)
Grade 3 - 4	0 (0%)	0 (0%)
Any ICANS	1 (5%)	0 (0%)

- No DLTs reported
- No moderate or severe chronic GvHD (cGVHD) with TSC-101
  - One case of mild cGVHD seen in both arms
- Three cases of CRS reported after TSC-101 infusions
  - Two Grade 1 events and one Grade 2 event; all resolved
- One case of ICANS reported after a TSC-101 infusion
  - Depressed consciousness (Grade 2) reported following infusion #2 in a patient with relapsing disease. Treated with tocilizumab and steroids; resolved within 24 hours

TSCAN THERAPEUTICS

Sept 19, 2025 data cut; Al-Malki et al, abstract ID 2391, presented at ASH Annual Meeting December 2025; GvHD = graft-versus-host disease; ICANS = Immune Effector Cell Associated Neurotoxicity Syndrome; CRS = Cytokine Release Syndrome

Use of TSC-101 shows fewer relapses, more durable remissions, and longer survival



3 of 3 (100%) TSC-101 subjects remain relapse-free at 2 years

1 of 4 (25%) Control subjects remain relapse-free at 2 years

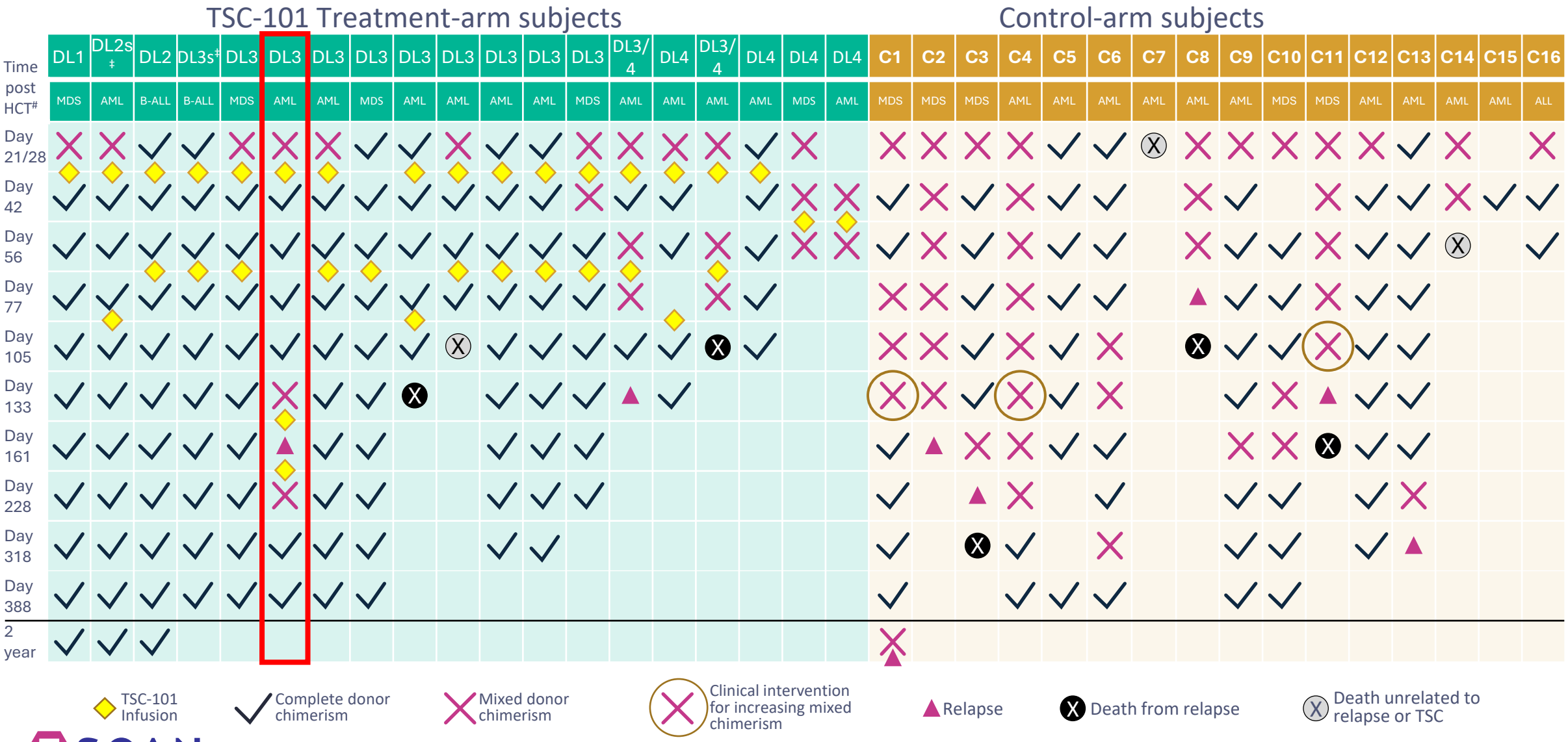
- TSC-101 infusion
- Clinical intervention for concern for relapse
- Relapse
- Death from relapse
- Death unrelated to relapse or TSC
- Ongoing follow-up
- MRD-positive
- MRD-negative
- MRD pending

‡Dose did not meet target dose criteria in supplemental cohorts

	Hazard Ratio	p value
Probability of relapse	0.46	0.22
RFS	0.50	0.23
OS	0.61	0.52

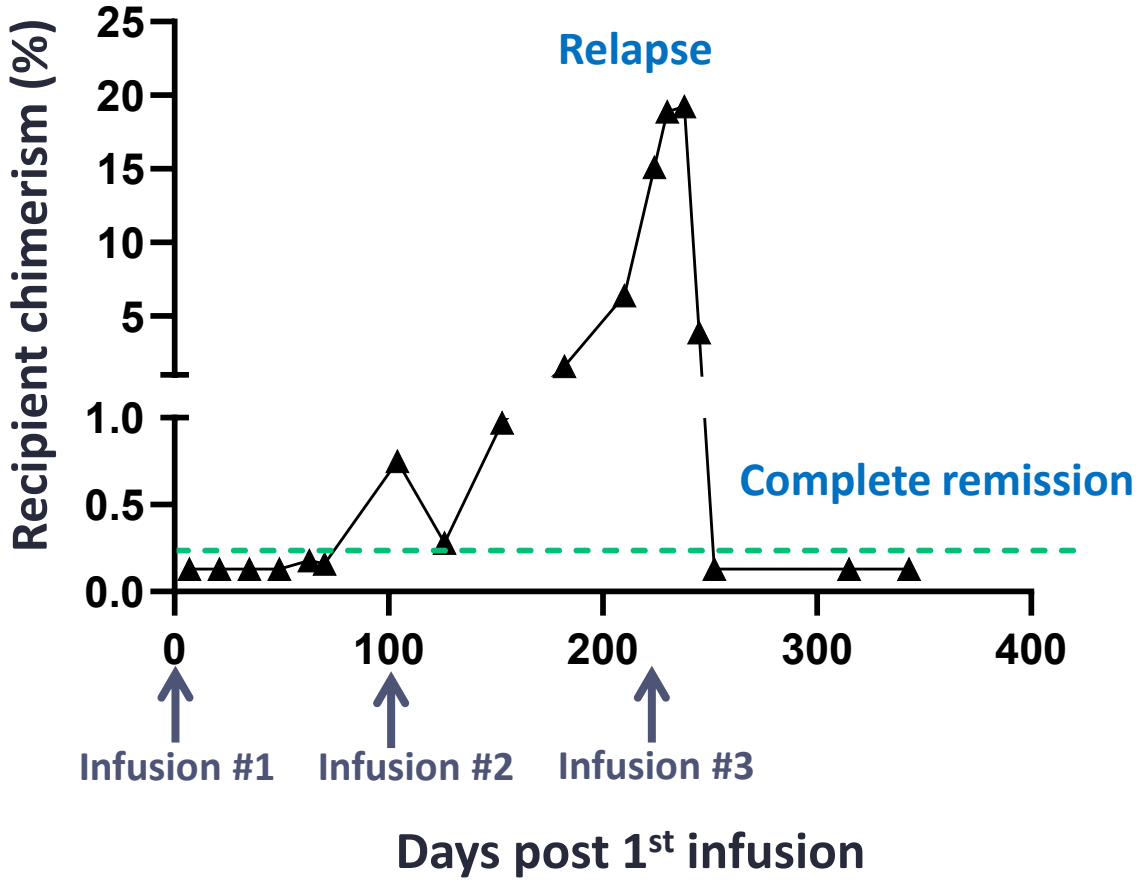
Sept 19, 2025 data cut; Al-Malki et al, abstract ID 2391, presented at ASH Annual Meeting December 2025; MRD measured by flow cytometry (lower limit of detection 0.1-1%) or NGS (lower limit of detection 0.05-0.1% in myeloid and 0.001-0.01% in lymphoid malignancies)

TSC-101 continues to show strong activity by chimerism assays



Data as of Sept 19, 2025; #Donor chimerism results using investigational NGS assay (Alloheme) with LOD of 0.2% or the short tandem repeat (STR) 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

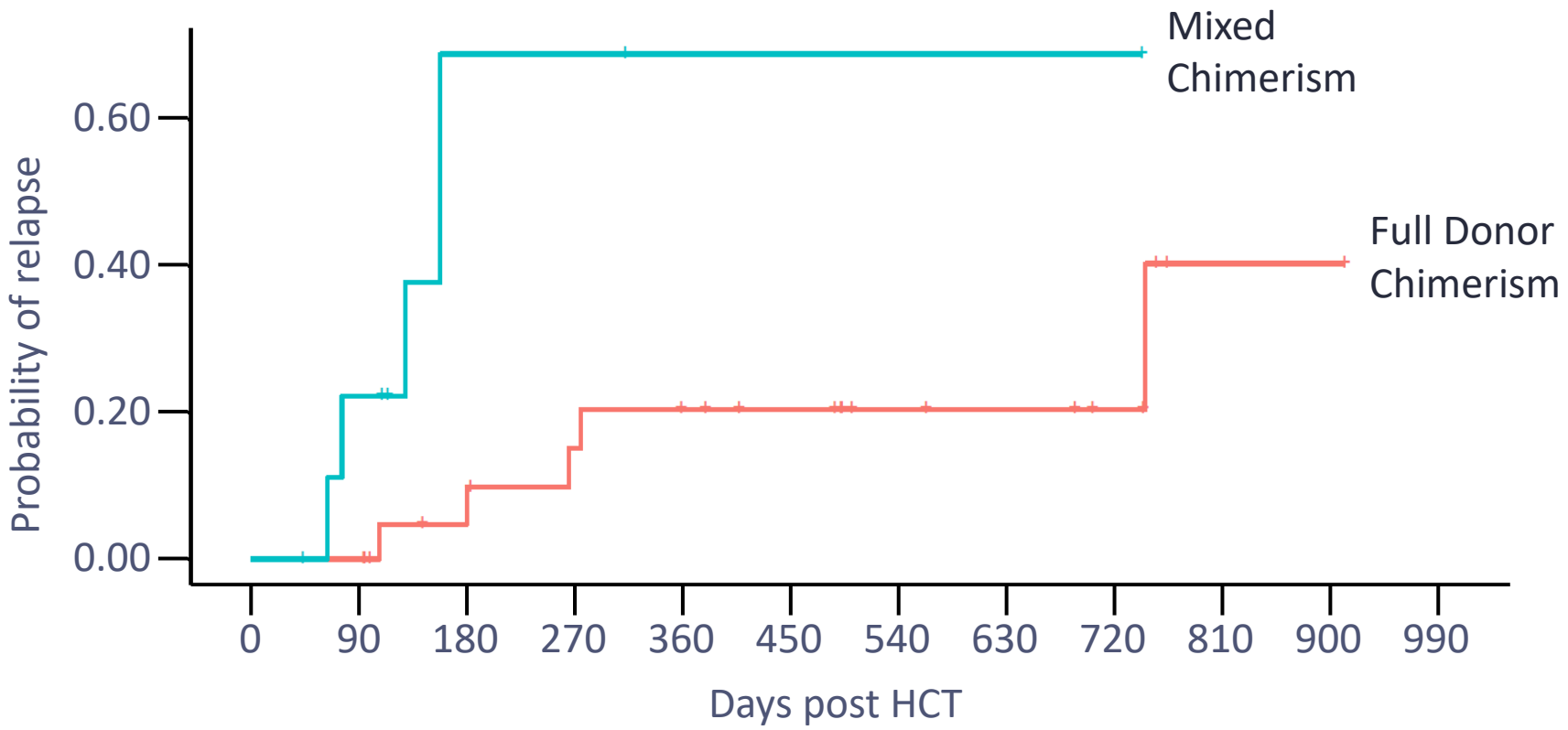
TSC-101 infusion post-relapse converted subject to complete donor chimerism and complete remission



- 74-year-old male with AML in CR1 received 2 infusions of TSC-101 per DL3
- 2nd infusion was delayed by 36 days due to treatment of aGvHD
- At time of relapse, received a small 370 M-cell infusion without lymphodepletion or additional chemotherapy
- No evidence of disease at next evaluation and remained in complete remission for 5 months before relapsing*

Recipient chimerism measured in CD33 compartment; Sept 19, 2025 data cut; Al-Malki et al, abstract ID 2391, presented at ASH Annual Meeting December 2025; *Patient received additional therapies before succumbing to their disease

Early chimerism results at two months are predictive of outcomes



Chimerism status at 2 m post-HCT is predictive of relapse-free survival (HR 4.6, p=0.02)

Sept 19, 2025 data cut; Al-Malki et al, abstract ID 28015, presented at 2026 Tandem Meetings | Transplantation & Cellular Therapy Meetings of ASTCT and CIMBTR, February 2026

Recently updated ALLOHA™ Phase 1 data support launch of pivotal trial in Q2 2026

Attractive safety profile

Infusions with TSC-101 were **well-tolerated with no DLTs** and adverse events following HCT + TSC-101 were consistent with HCT alone

Meaningful relapse-free benefit

Favorable **relapse-free survival** (HR=0.50; p=0.23) and **overall survival** (HR=0.61; p=0.52)

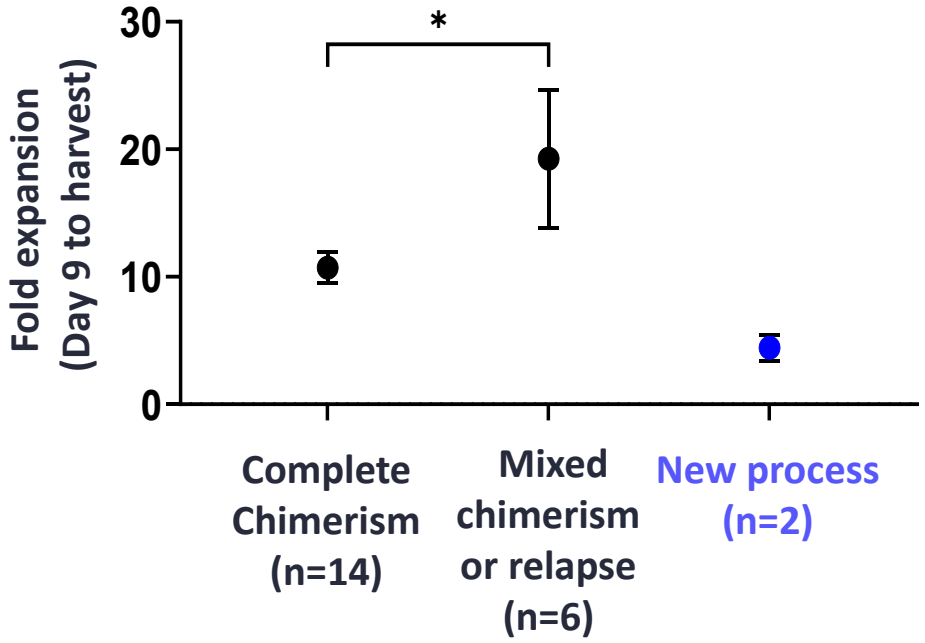
Long-term persistence

Durable responses with **100% (3/3) of patients 2-years post-HCT** showing detectable TSC-101 cells and **no evidence of disease**

*Sept 19, 2025 data cut; Al-Malki et al, abstract ID 2391, presented at ASH Annual Meeting December 2025; RFS: relapse-free survival; OS: overall survival

Commercial-ready manufacturing process requires less *ex vivo* T-cell expansion

- New commercial-ready process reduces manufacturing time by 5 days (12 days vs. 17 days)
- Clinical drug product manufactured using the new process shows a significant reduction in *ex vivo* expansion (from mean of 13-fold to 4-fold)



Symbols: mean +/- standard error; *p<0.05.

Presented during ASH 2025 Virtual KOL Event, December 8, 2025

- **First patient achieved complete donor chimerism within 3 weeks of infusion**
- **Data on 5-10 patients expected in Q2 2026**

TSCAN THERAPEUTICS

Pivotal trial design for TSC-101 uses a biologically-assigned control arm to support relapse-free survival as the primary endpoint

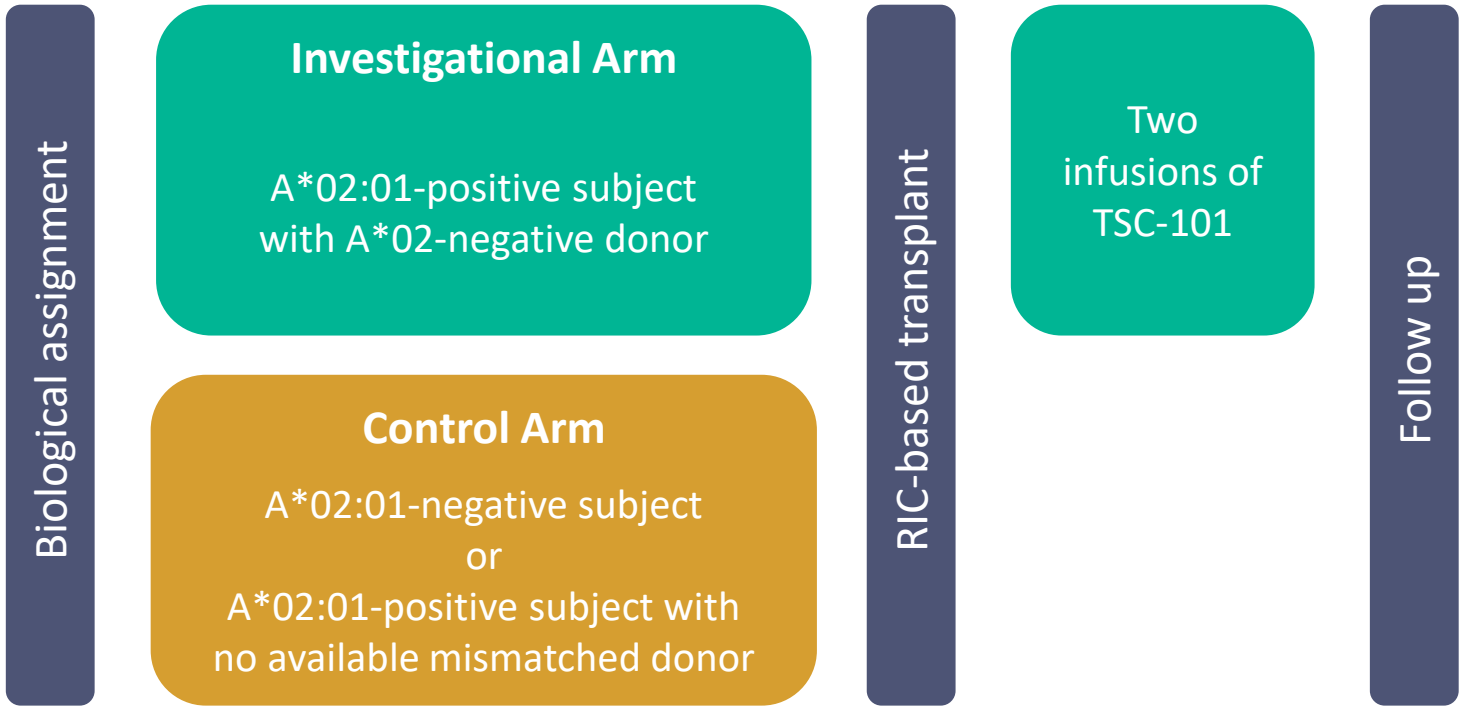
- Company has reached agreement with the FDA to use a pivotal trial design that mirrors the ALLOHA™ Phase 1 trial (NCT05473910)
- All patients that are eligible for TSC-101 will be assigned to the investigational arm

Study Population

- AML or MDS
- Age ≥ 18 years
- Undergoing first allo-HCT
- Eligible for reduced intensity conditioning (RIC)

Key Endpoints

- **Primary Endpoint**: RFS
- Key Secondary Endpoint: OS



AML: Acute myeloid leukemia; MDS: Myelodysplastic syndromes; Allo-HCT: Allogeneic hematopoietic cell transplantation; RIC: Reduced intensity conditioning; RFS: Relapse-free survival; OS: Overall survival

Market Access Strategy:

Clear unmet need with concentrated market and a broad range of expansion opportunities

TSCAN THERAPEUTICS

TSC-101 is a first-in-class TCR-T therapy with an exciting commercial opportunity

Strong Value Proposition: TSC-101 has positive early efficacy & safety data, addressing a major unmet need in the post-transplant setting where no therapeutic agents are approved

Streamlined Commercial Operations

- TSC-101 is used with current SOC transplant; limited practice change required
- Transplantation occurs in concentrated treatment centers, simplifying patient identification
- HLA-defined patient eligibility through standard testing

Commercial-Ready Manufacturing

- TCR-T cells engineered from healthy donor T cells, resulting in more consistent product
- Allogeneic therapy allows for manufacturing to be completed prior to ideal infusion time
- Global CDMO engaged for scaled-up manufacturing; initial tech transfer completed

Market Access Planning Underway

- Favorable pricing corridor established in the range of recent cell therapy approvals
- Clear reimbursement pathway being mapped with payers
- Established patient access strategy to enable rapid uptake of TSC-101

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Sources: Simon Kucher pricing analysis; SOC = standard of care; HLA = human leukocyte antigens

Developing a top tier go-to-market strategy

Targeting **~40** authorized treatment centers at launch

Currently **~60%** of all allo transplants in the U.S. occur at the targeted ATCs

Targeting ATCs

- Concentrated market at known treatment centers
- 20 ATCs currently included in Phase 1 study
- Up to 10 additional sites planned for pivotal study
- ~40 ATCs targeted at launch

Market Access

- Clear reimbursement path across payer types
- Flexibility for inpatient/outpatient infusion(s)
- Pre-approval education to payers and ATCs

Sales Force

- Dedicated team acting as direct partners to key centers, providing focused support and seamless launch execution

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ATC = authorized treatment center

Heme Program Progress and Anticipated Milestones

- Reached agreement with FDA on pivotal trial design
- Transferred commercial-ready manufacturing process to external CDMO
- Two-year relapse data from initial TSC-101 patients Dec 2025
- Cleared INDs for TSC-102-A01 and TSC-102-A03 Q1 2026
- Share data from Cohort C patients with commercial-ready manufacturing process in **Q2 2026**
- Launch pivotal study for TSC-101 in **Q2 2026**
- Initiate Phase 1 study of TSC-102-A01 and TSC-102-A03 in **H2 2026**

Solid Tumors

Developing multiplex TCR-T therapy to overcome tumor heterogeneity

TSCAN THERAPEUTICS

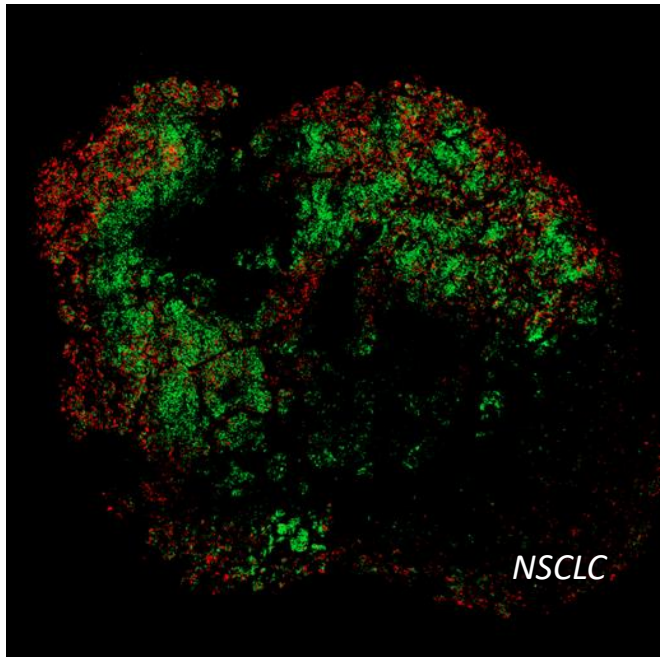
Multiplex TCR-T therapy designed to overcome the heterogeneity of solid tumors

Unmet Medical Need

Solid tumors remain difficult to treat and cure, representing a large unmet medical need

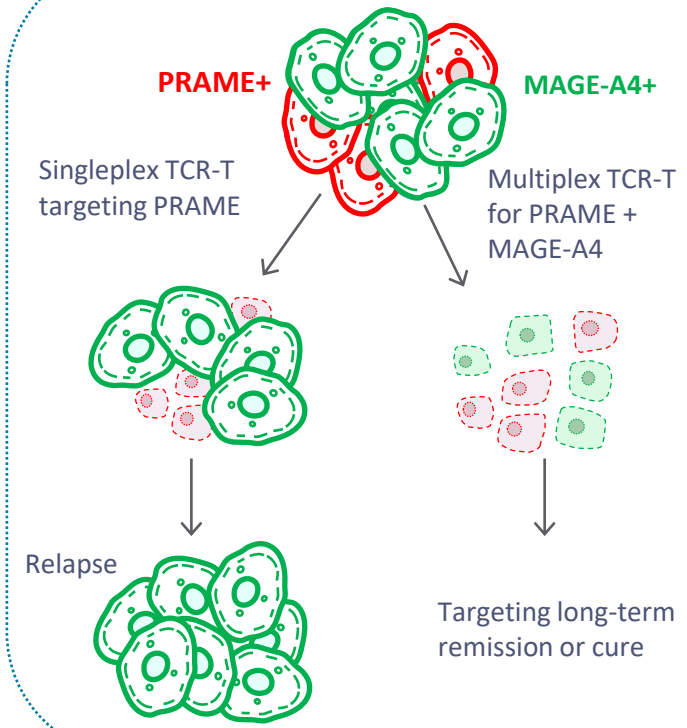
Only 10-35%* of patients diagnosed with metastatic solid tumors survive more than 5 years

Many solid tumors exhibit heterogeneity of target expression



Single solid tumor expression of **PRAME** and **MAGE-A4**

Durable responses may require TCR-T therapy for multiple targets



In vivo engineering platform currently being developed to enable **off-the-shelf multiplex TCR-T therapy**

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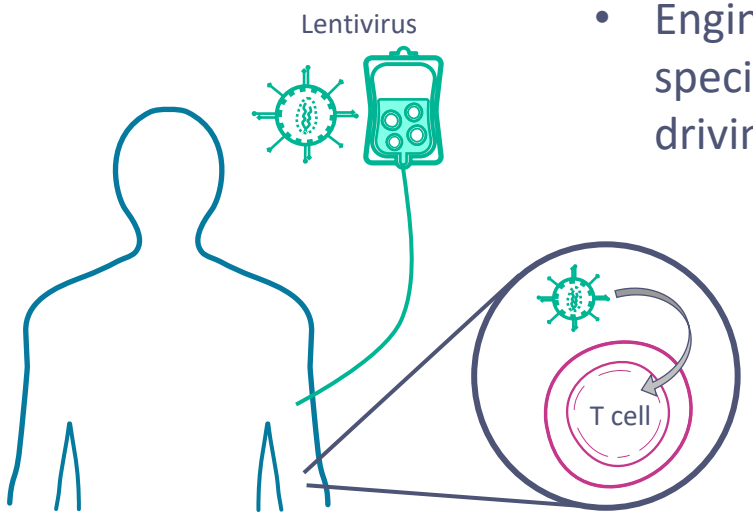
Source: SEER; * Across HNSCC, NSCLC, sarcoma, cervical, and anal cancer; Data on file

Lentiviral *in vivo* technology addresses the key challenges of autologous TCR-T

In vivo engineering solves the key challenges of autologous TCR-T approaches

- Lymphodepletion is not required
- Off-the-shelf (no patient-specific manufacturing); lentivirus prepared in large batches with significantly reduced COGS
- No vein-to-vein time
- Promising early clinical data from *in vivo* CAR-T therapy



In vivo lentiviral approach offers potential for long-term response

- Modified lentiviruses specifically target T-cells *in vivo* and enable permanent integration of genetic cargo
- Engineered T-cells express a cancer-specific TCR and form memory cells, driving long term anti-cancer activity

TSCAN THERAPEUTICS

Autoimmunity

Deploying TargetScan platform to discover novel T-cell targets in autoimmune disorders

TSCAN THERAPEUTICS

Autoimmunity represents an exciting area of unmet need with few validated targets

Current therapies typically provide general immune suppression, leading to complications (e.g., increased risk of infection)

Target-specific therapies provide a way to address the cause, rather than the symptoms, of autoimmunity

Many autoimmune disorders have a substantial T-cell component, but the targets of these pathogenic or protective T-cells are largely unknown

TScan's target discovery platform provides a way to identify targets in autoimmune disease, unlocking the development of **targeted therapeutics**

TSCAN THERAPEUTICS

TargetScan platform can be used to identify the shared autoantigens driving T-cell mediated autoimmune diseases, enabling development of first-in-class drugs

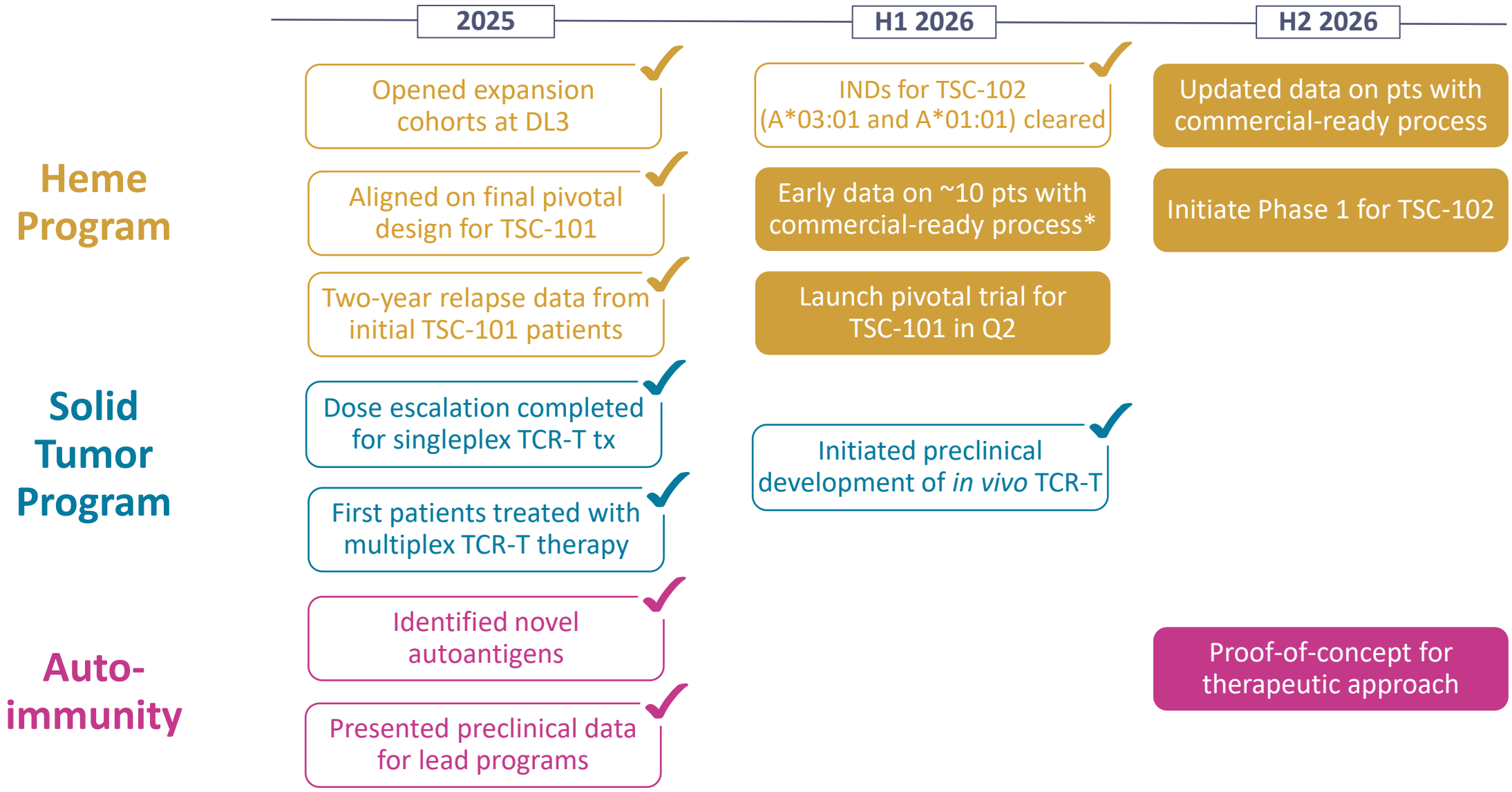
Identified targets for systemic sclerosis, ulcerative colitis, ankylosing spondylitis, and birdshot uveitis using proprietary platform

TSCAN THERAPEUTICS

Multi-year collaboration using TargetScan to identify targets for T cells in patients with Crohn's disease

AMGEN

2026 will be a transformational year for TScan



*Expansion cohort C

THANK YOU