

Attacking Solid Tumors with Novel TCR-T Cell Therapies

| May 2022

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Shareholder Value Creation:

A Clinical Stage TCR-T Company Targeting Solid Tumors



Weaponizing the immune system with powerful TCRs to treat solid tumors

Targeting driver mutations using T cells genetically modified with proprietary non-viral *Sleeping Beauty* platform

Vision 2022 – Execution Mindset, Delivering Results

- 1 Phase 1/2 TCR-T Library Trial Enrolling; FPI anticipated 1H22, interim data expected 2H22
- 2 Clinical Library of 10 TCRs (*KRAS*, *TP53*, *EGFR*) Targeting Six Solid Tumor Indications
- 3 Utilize internal cGMP Manufacturing Facility For TCR-T Library Trial
- 4 Proprietary TCR Discovery Platform, hunTR™, Expanding and Advancing the Pipeline

TCR-T Platform with Multiple Solid Tumor Programs in Pipeline

PROGRAM	TARGETS	INDICATION	DISCOVERY	PRECLINICAL	IND-ENABLING	PHASE 1
Library TCR-T cell Therapy (Company Sponsored at MDACC)	<i>KRAS, TP53 & EGFR</i> Hotspot Mutations	Lung	██████████	██████████	██████████	██████████
		Colon/rectum	██████████	██████████	██████████	██████████
		Endometrium	██████████	██████████	██████████	██████████
		Pancreas	██████████	██████████	██████████	██████████
		Ovary	██████████	██████████	██████████	██████████
		Bile Duct	██████████	██████████	██████████	██████████
mbIL-15 TCR-T cell Therapy	<i>KRAS & TP53</i> Hotspot Mutations	Solid Tumors	██████████	██████████	██████████	██████████
Undisclosed Targets & Modalities (hunTR™)	Cancer-specific Somatic Mutations	Cancers with Hotspot Mutations	██████████	██████████	██████████	██████████

TCR-T is Superior to Other Cell Therapy Approaches for Solid Tumors

	TCR-T	CAR-T	TIL
Target Intracellular & Extracellular Antigens	✓		✓
Proven Efficacy in Solid Tumors	✓		✓
Defined Target Specificity	✓	✓	
Targets Somatic Neoantigens	✓		✓
Established Transposon-based Gene Transfer	✓	✓	

Table above not based on head-to-head trials

A Differentiated TCR-T Program Targeting Solid Tumors



Targeting Hotspot Mutations

Hotspot mutations are ideal targets for defeating cancer



Sleeping Beauty Technology

Non-viral transposition technology has favorable safety profile

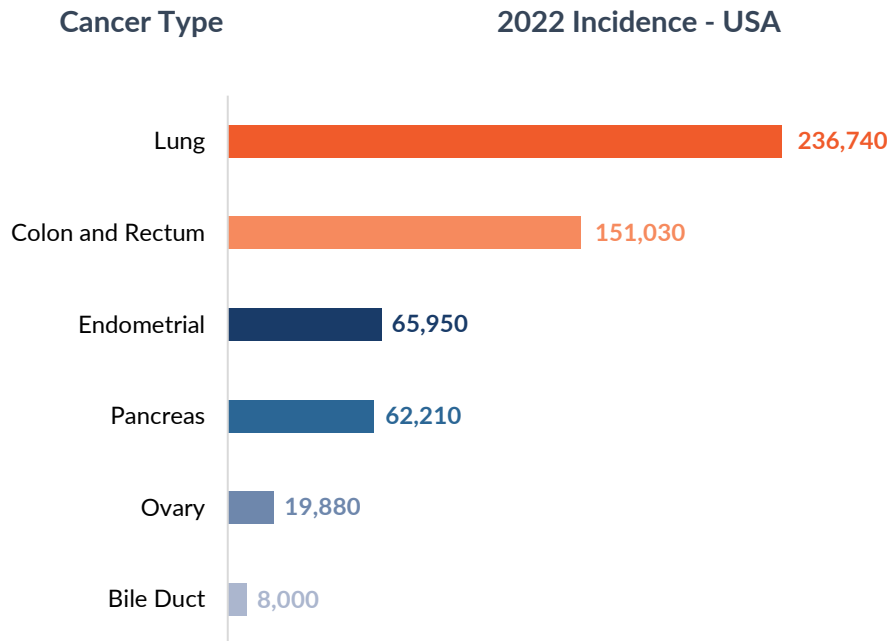
Rapid, flexible & cost-effective manufacturing



hunTR™ Platform (human neoantigen T cell Receptor)

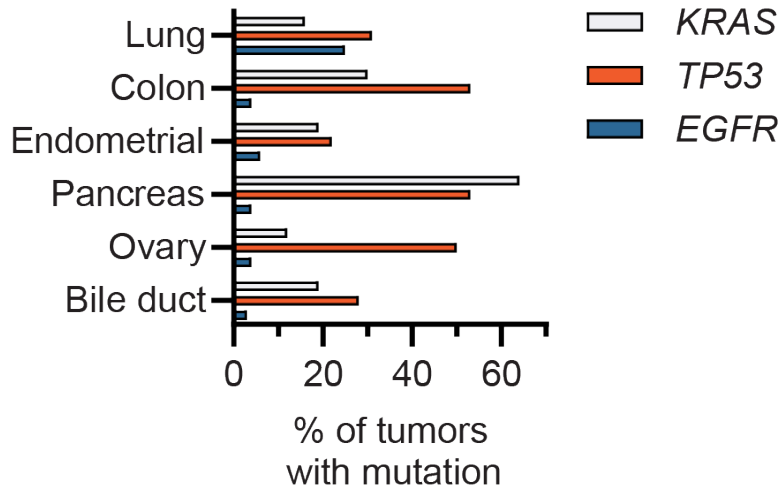
Robust discovery engine enables expansion of TCR Library

Our TCR-T Cell Platform Targets Solid Tumors in Large Patient Populations with Unmet Clinical Need



- In the US, 92% of new cancer cases are solid tumors
- 4,804 patients are diagnosed every day with cancerous solid tumor
- 1,548 patients die every day from a solid tumor cancer

KRAS, TP53, EGFR Mutations are Commonly Expressed in Targeted Indications



High frequency tumor targets, not expressed in normal tissues

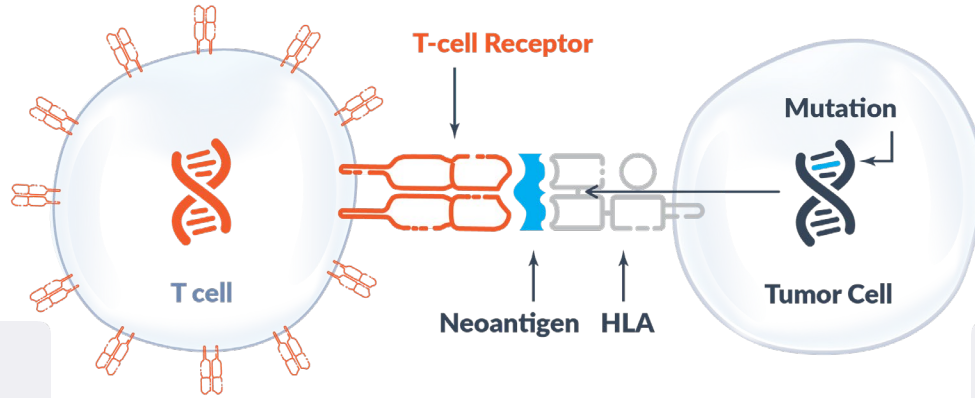


Killer TCR-T cells specific for the mutation without off-tumor toxicity



Unmet clinical need for patients with solid tumors

TCRs Can Give Patients' T Cells a New Ability to Recognize and Kill Tumor Cells with Common Mutations



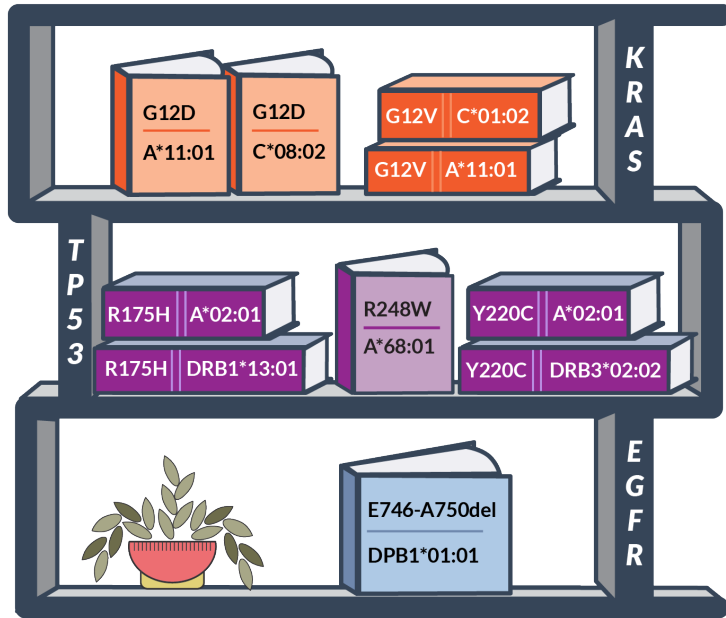
T-cell Receptors

- Naturally occurring
- Highly specific
- Intracellular and extracellular targets

Neoantigens

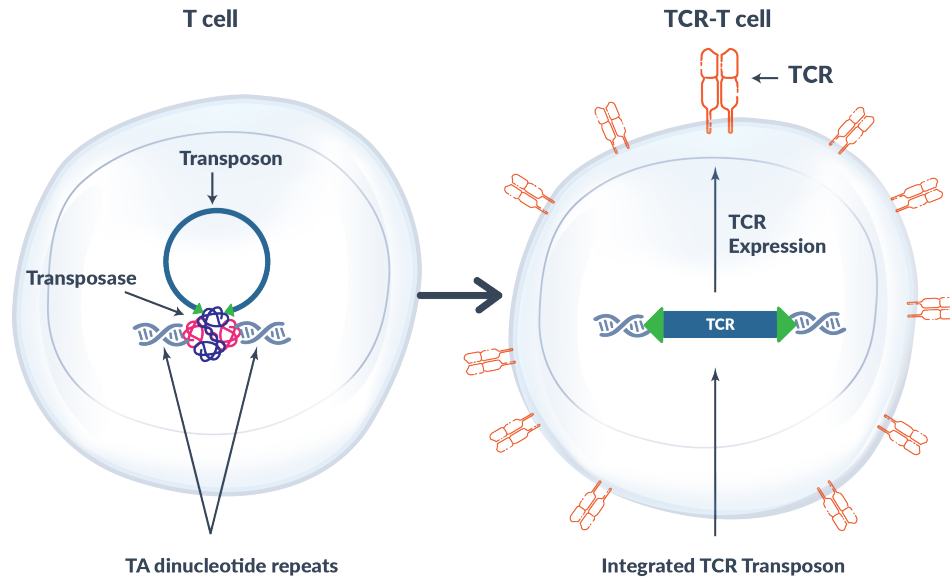
- Derived from mutations
- Expressed by tumor, not in normal tissues
- Presented on the tumor surface by HLA

TCR Library Captures High Frequency Mutations and HLA Types



- Common HLAs are represented in our TCR library
- Certain mutations have more than one HLA restriction
- As more TCRs are added to our library, the addressable patient market size will further increase

Non-viral *Sleeping Beauty* Platform for Manufacturing TCR-T Cells



- Efficient integration without the complexity of gene editing or viral approaches
- Rapid, cost-effective manufacturing
- Flexible approach to add TCRs; attractive choice for library
- Platform can accommodate large transgene size
- Process scalable for clinical production

TCR-T Cells Recognize *KRAS*, *TP53*, *EGFR* Mutations and Kill Solid Tumor Cells



Powerful TCRs:

Naturally-occurring, high avidity TCRs recognize low levels of neoantigens



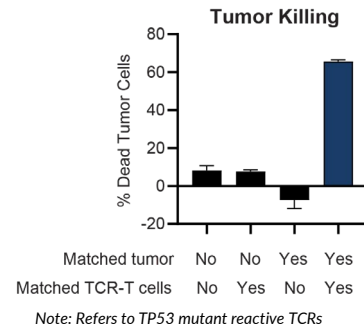
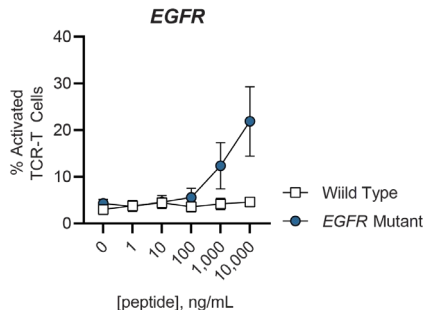
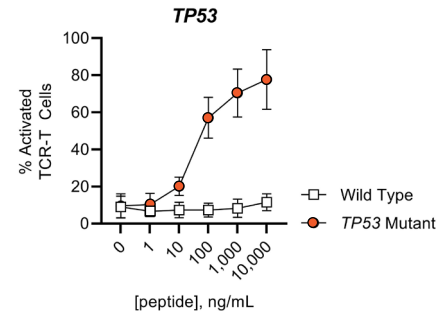
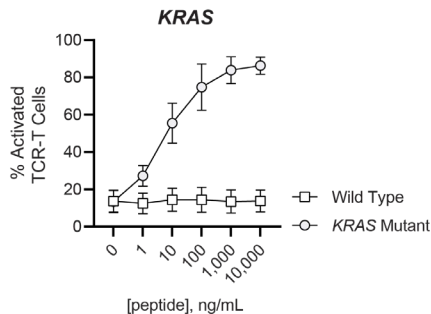
No off-target toxicity observed:

Specificity for the mutation with negligible recognition of the wild type sequences

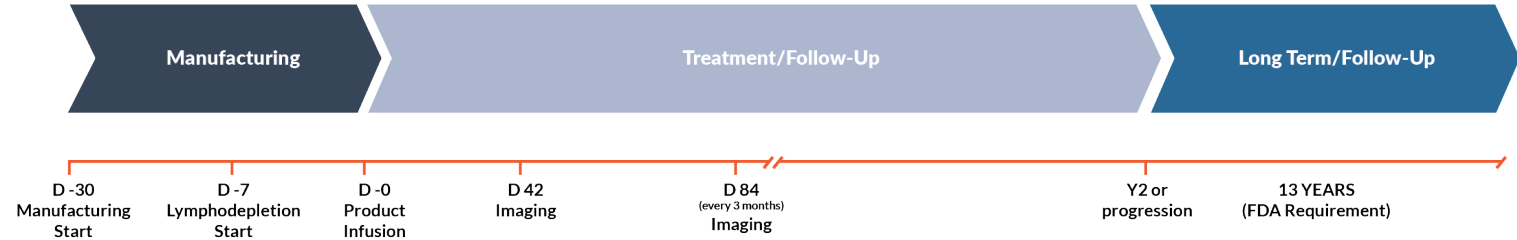


Tumor killing:

Recognition of tumor cells that express mutation and HLA



Actively Enrolling First-in-Human TCR-T Clinical Trial with Innovative Library Approach



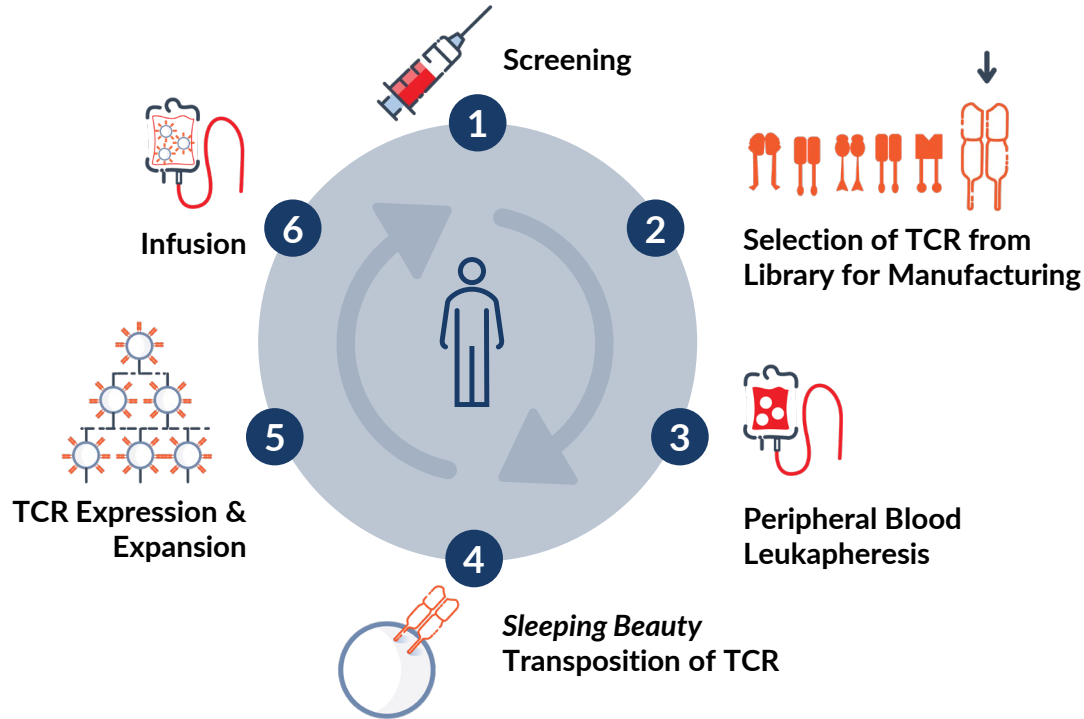
- ✓ Trial enrolling patients where a TCR matching a neoantigen / HLA pairing is available in our TCR-T library.
- ✓ Phase I is a prospective, open-label, dose-escalation study of TCR-T cells in patients with progressive or recurrent solid tumors who have failed standard therapy utilizing a Bayesian optimal interval design (BOIN) with an accelerated dose escalation.
- ✓ Patients will be enrolled in one of three dose cohorts.
- ✓ Expect to dose first patient in 1H 2022 ([NCT05194735](#)).

Phase I Objectives:

- ✓ Define dose limiting toxicity (DLT) and the maximum tolerated dose (MTD) or recommended phase II dose (RP2D).
- ✓ Evaluate the feasibility of TCR-T cell drug product manufacturing.

- ✓ Phase II (Dose Expansion) is a prospective, open-label, single-dose portion of the study which is expected to begin once the MTD/RP2D in the Phase I part has been determined.

Each Autologous TCR-T Cell Product is Manufactured with a TCR Matched for the Patient's Mutation and HLA Type



State of the Art, In-House cGMP Manufacturing Facility Operational



Provides control over clinical manufacturing, including expertise and scheduling



Located in Houston near Texas Medical Center



Staffed by highly skilled Alauenos personnel



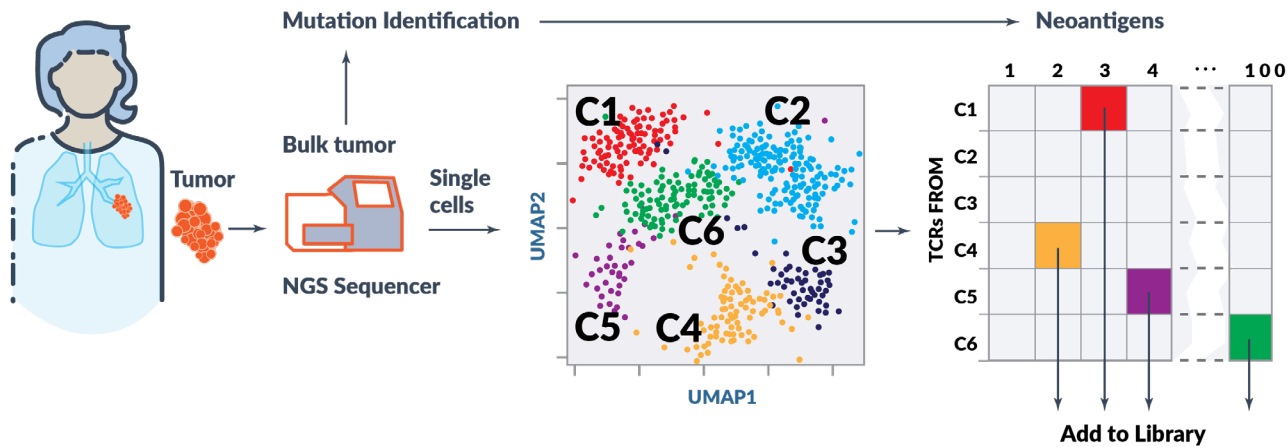
Will be used for early phase clinical manufacturing



TCR-transposed T cells targeting neoantigens have been grown:

- ✓ with high TCR expression
- ✓ to clinical dose levels
- ✓ with high viability

hunTR™ Program Rapidly Expands TCR Library Targeting Hotspot Mutations



Focus on neoantigens, particularly those arising from hotspot mutations

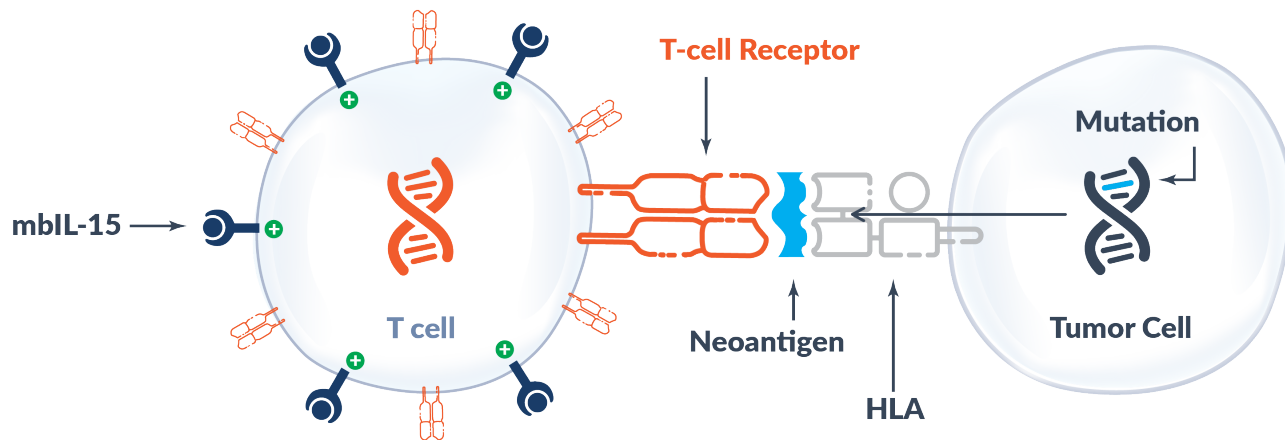


Empirical screening of TCRs from CD4+ and CD8+ T cells directly from tumor



High-throughput TCR screening

mbIL-15 Improves the Persistence and Anti-tumor Activity of TCR-T cells in the Tumor Microenvironment (TME)



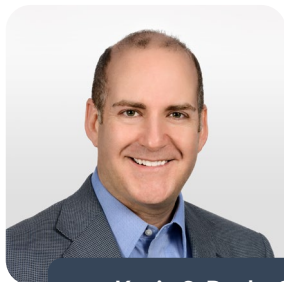
✓ Pro-survival signaling limits negative signals from the TME

✓ Stem-cell memory mbIL-15 TCR-T cells regenerate TCR-T cells

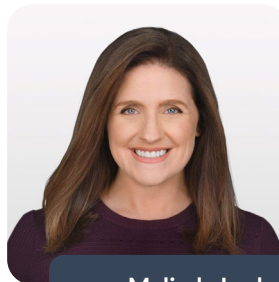
✓ Limit effects of HLA loss by supporting TILs and NK cells

✓ Potential for TCR-T cell therapy without lymphodepletion

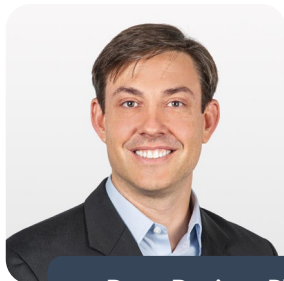
Experienced Management Team



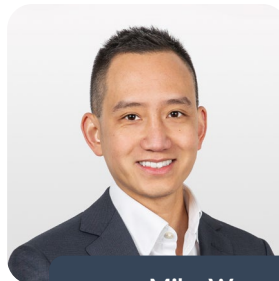
Kevin S. Boyle, Sr.
Chief Executive Officer



Melinda Lackey
SVP Legal



Drew Deniger, PhD
VP Research & Development



Mike Wong
VP Finance

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