ALAUNOS™ THERAPEUTICS

Attacking Solid Tumors with Novel TCR-T Cell Therapies

January 2022

Forward Looking Statements

This presentation contains forward-looking statements as defined in the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts, and in some cases can be identified by terms such as “may,” “will,” “could,” “expects,” “plans,” “anticipates,” “believes” or other words or terms of similar meaning. These statements include, but are not limited to, statements regarding the Alaunos Therapeutics, Inc.'s (”Alaunos" or "the Company") business and strategic plans, the Company's ability to raise capital, and the timing of the Company's research and development programs, including the anticipated dates for enrolling and dosing patients in the Company’s clinical trials. Although the management team of Alaunos believes that the expectations reflected in such forward-looking statements are reasonable, investors are cautioned that forward-looking information and statements are subject to various risks and uncertainties, many of which are difficult to predict and generally beyond the control of Alaunos, that could cause actual results and developments to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, among other things, changes in the Company’s operating plans that may impact its cash expenditures; the uncertainties inherent in research and development, future clinical data and analysis, including whether any of Alaunos’ product candidates will advance further in the preclinical research or clinical trial process, including receiving clearance from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies to conduct clinical trials and whether and when, if at all, they will receive final approval from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies and for which indication; the strength and enforceability of Alaunos’ intellectual property rights; and competition from other pharmaceutical and biotechnology companies as well as risk factors discussed or identified in the public filings with the Securities and Exchange Commission made by Alaunos, including those risks and uncertainties listed in the most recent Form 10-Q and Form 10-K filed by Alaunos with the Securities and Exchange Commission. We are providing this information as of the date of this presentation, and Alaunos does not undertake any obligation to update or revise the information contained in this presentation whether as a result of new information, future events, or any other reason.

Shareholder Value Creation:
A Clinical Stage TCR-T Company Targeting Solid Tumors

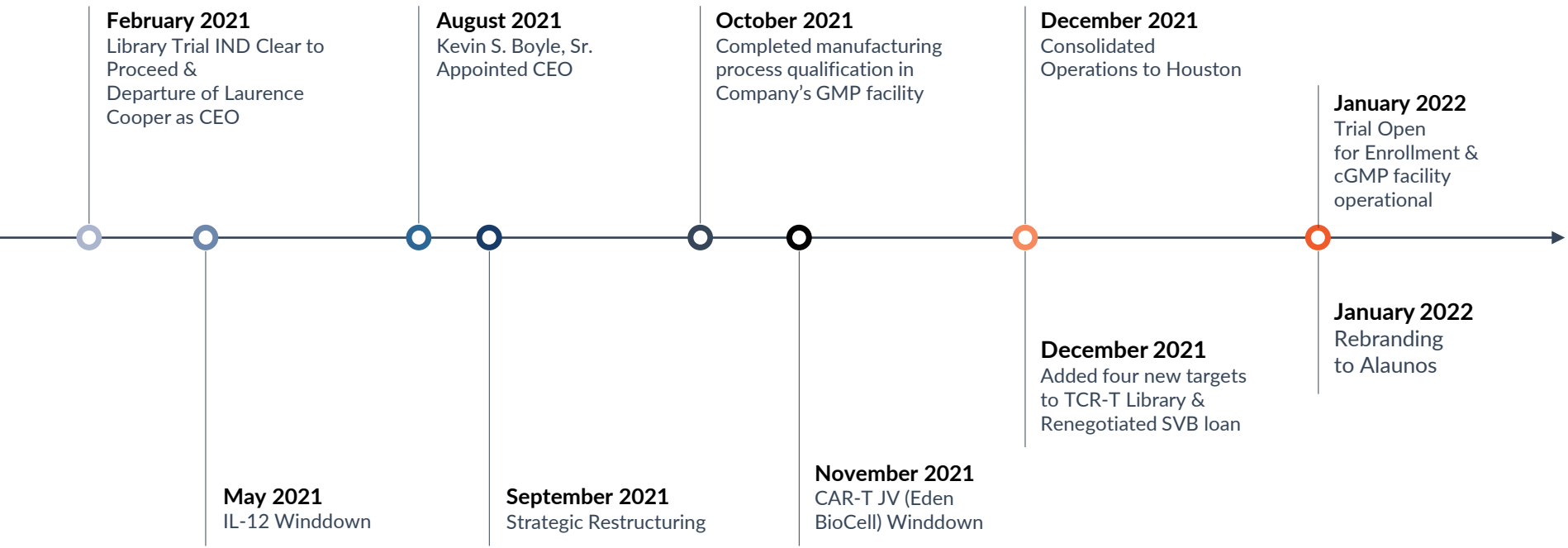
Weaponizing the immune system with powerful TCRs to treat solid tumors

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

From Ziopharm to Alaunos:
Focused and Executing on Advancing our Novel TCR-T Platform



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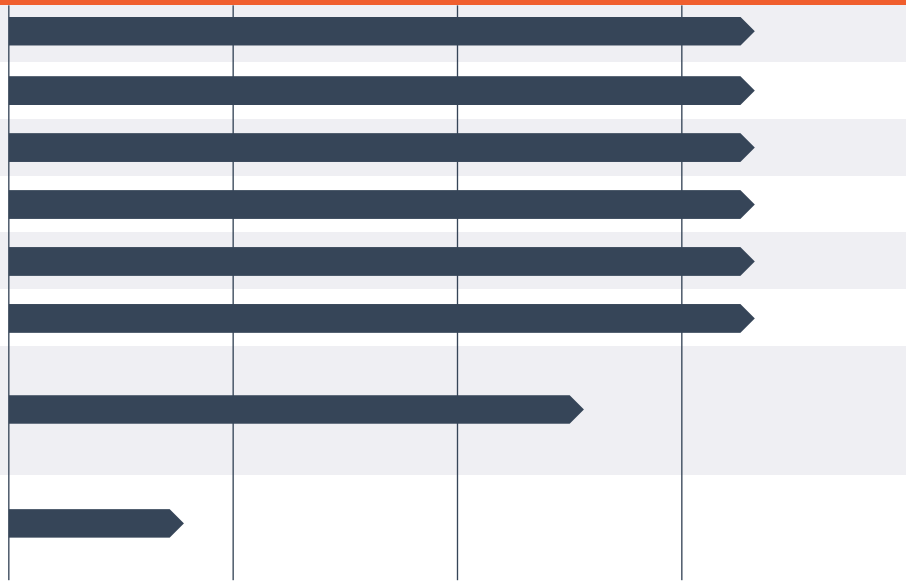
TCR-T Platform with Multiple Solid Tumor Programs in Pipeline

PROGRAM	TARGETS	INDICATION	DISCOVERY	PRECLINICAL	IND-ENABLING	PHASE 1
Library TCR-T cell Therapy (Company Sponsored at MDACC)	*KRAS, TP53* & *EGFR* Hotspot Mutations	Lung				
		Colon/rectum				
		Endometrium				
		Pancreas				
		Ovary				
		Bile Duct				
mbIL-15 TCR-T cell Therapy	*KRAS* & *TP53* 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**

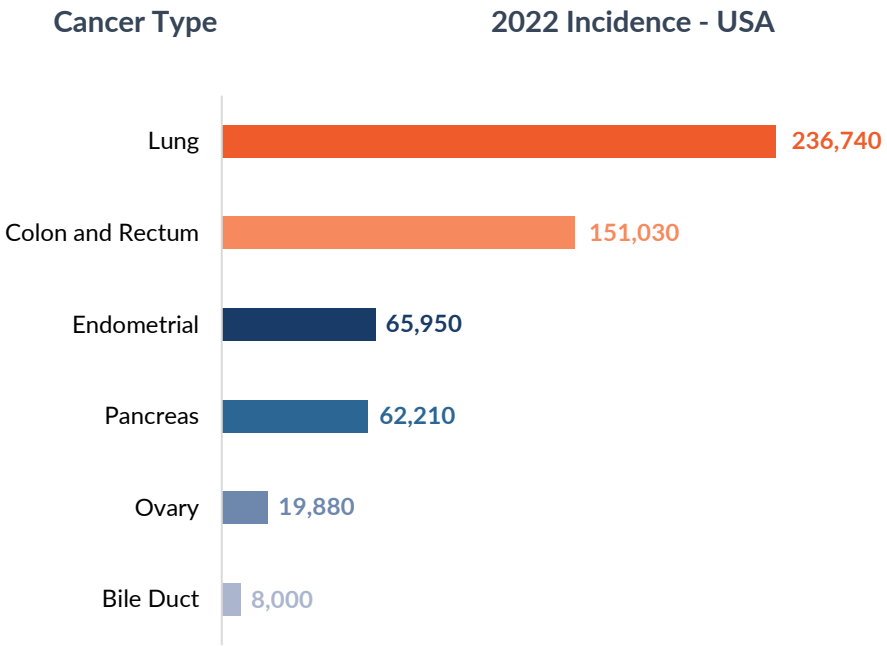
Non-viral transposition technology has favorable safety profile

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

Source: https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2022.html
https://www.cancer.org/cancer/bile-duct-cancer/about/key-statistics.html; CA CANCER J CLIN 2021;71:7–33

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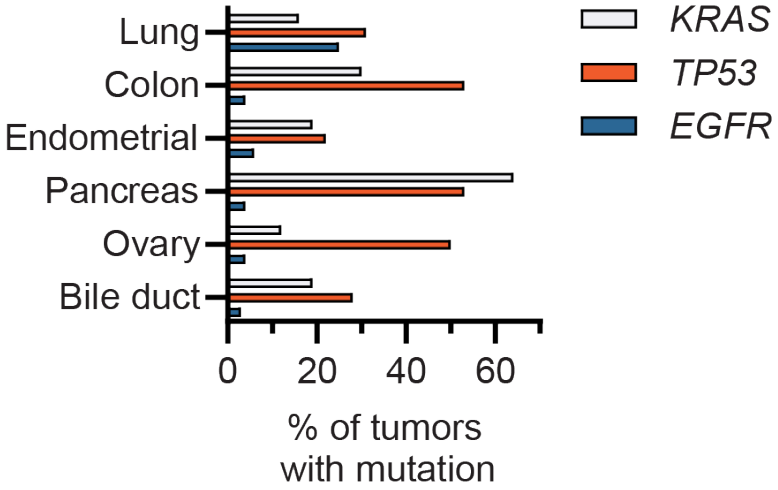
KRAS, *TP53*, *EGFR* Mutations are Commonly Expressed in Targeted Indications



- 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

Source: Catalogue of Somatic Mutations in Cancer (COSMIC) database https://cancer.sanger.ac.uk/cosmic

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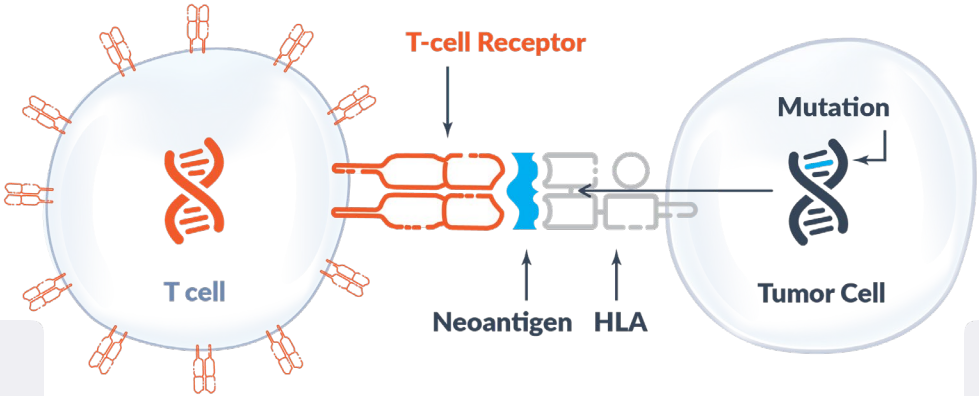
TCRs Can Give Patients' T Cells a New Ability to Recognize and Kill Tumor Cells with Common Mutations



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

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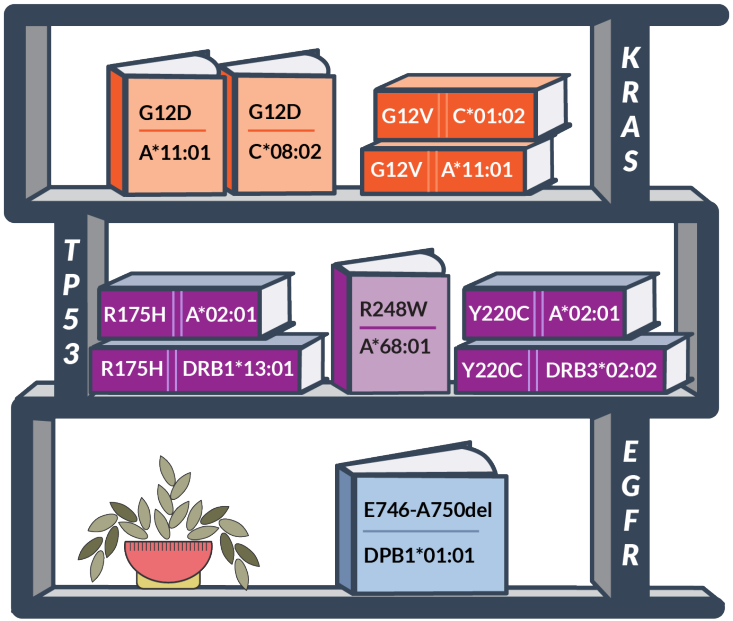
TCR Library Captures High Frequency Mutations and HLA Types



- 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

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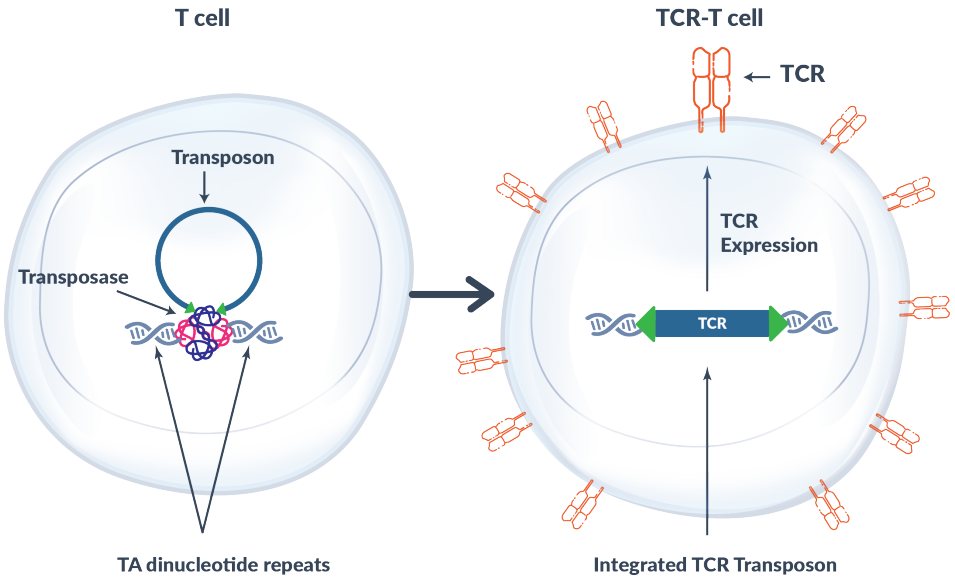
Non-viral *Sleeping Beauty* Platform for Manufacturing TCR-T Cells



- 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

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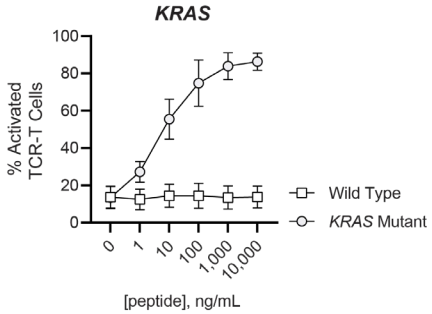
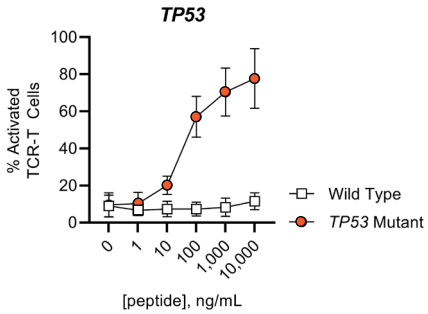
TCR-T Cells Recognize *KRAS*, *TP53*, *EGFR* Mutations and Kill Solid Tumor Cells

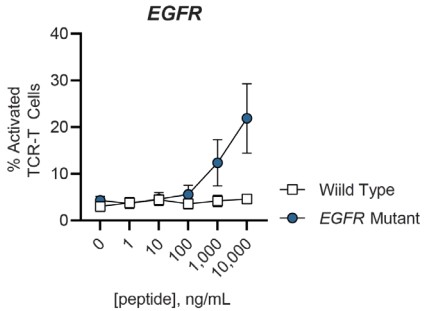
Powerful TCRs:
Naturally-occurring, high avidity TCRs recognize low levels of neoantigens

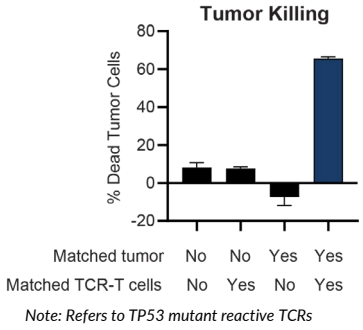
No off-target toxicity observed:
Specificity for the mutation with negligible recognition of the wild type sequences

Tumor killing:
Recognition of tumor cells that express mutation and HLA









Note: Refers to TP53 mutant reactive TCRs

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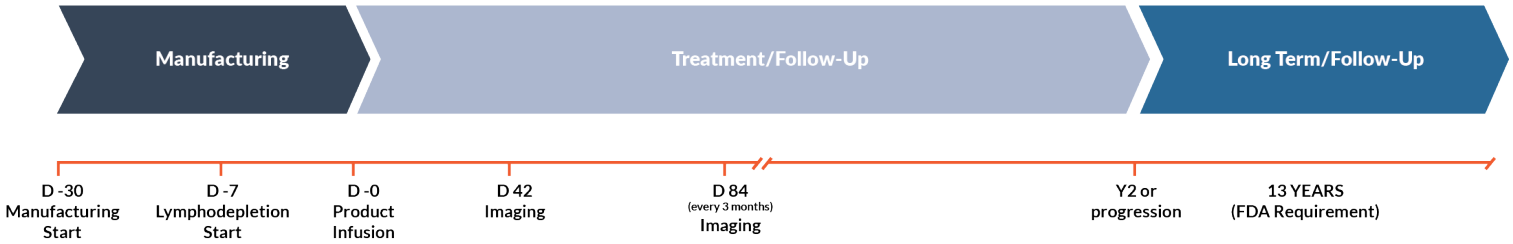
Actively Enrolling First-in-Human TCR-T Clinical Trial with Innovative Library Approach



- 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.

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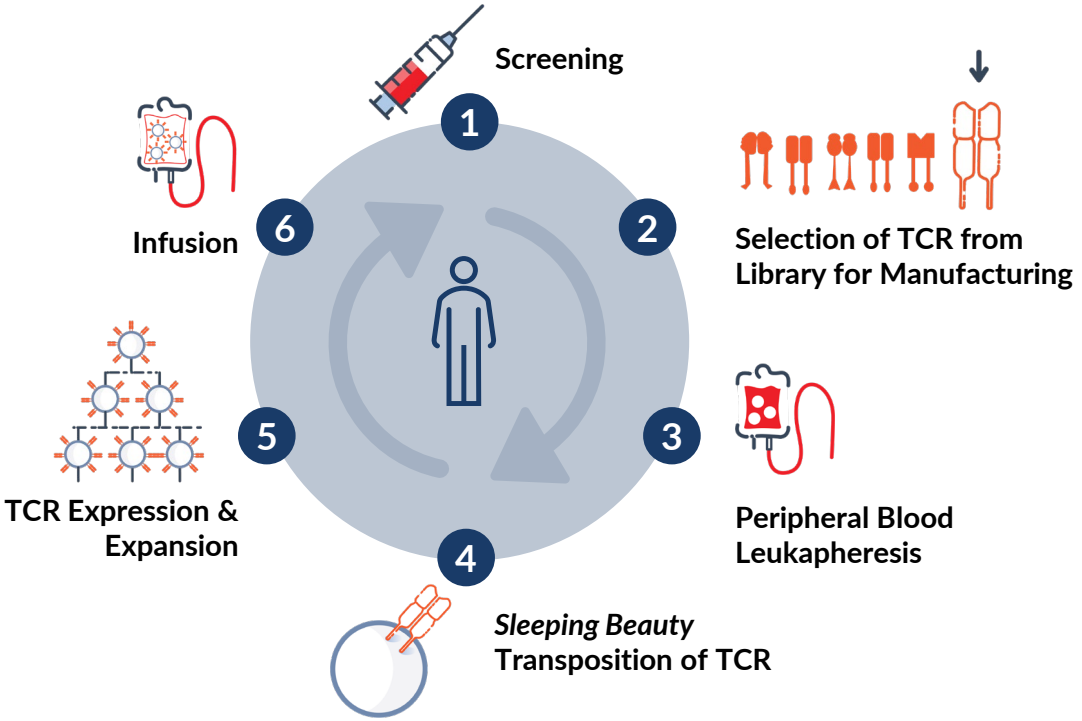
Each Autologous TCR-T Cell Product is Manufactured with a TCR Matched for the Patient's Mutation and HLA Type



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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

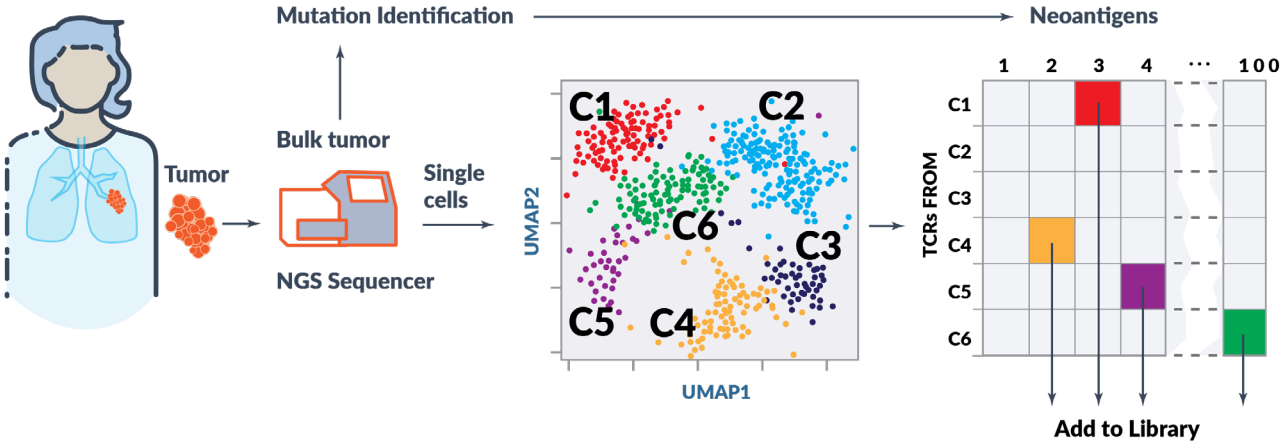
Staffed by highly skilled Alaunos personnel

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

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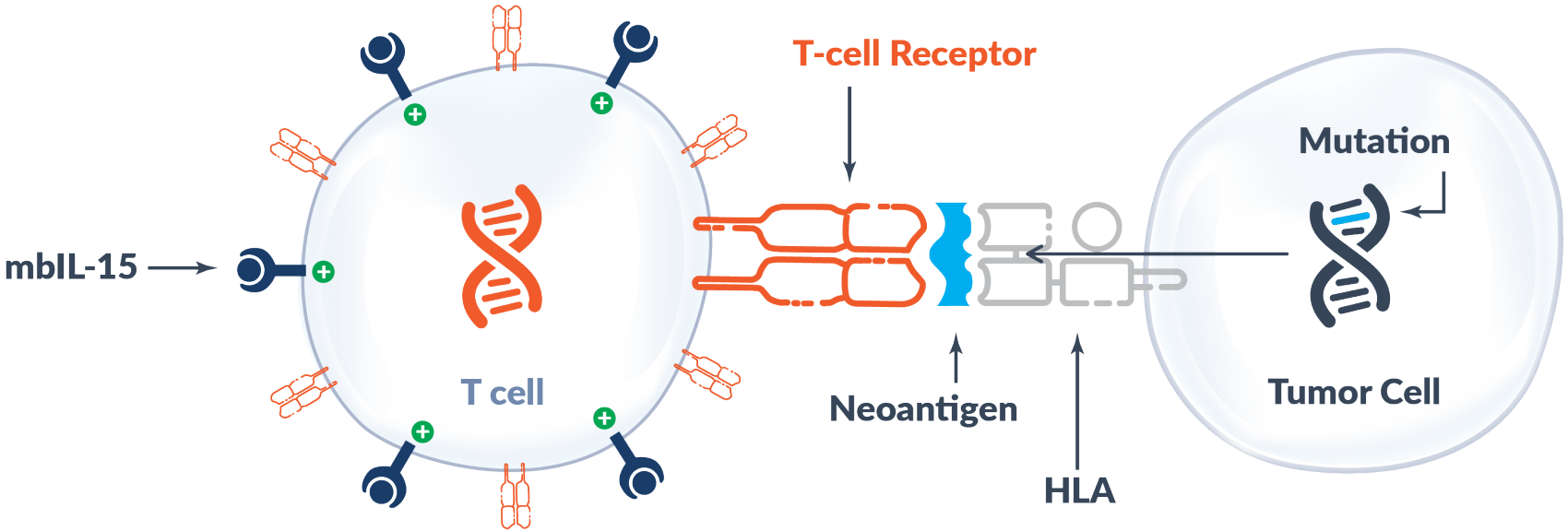
mbIL-15 can be Co-expressed with TCRs



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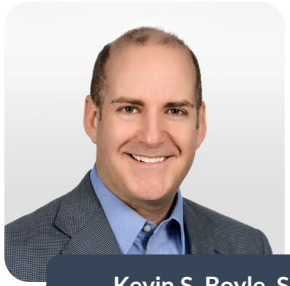
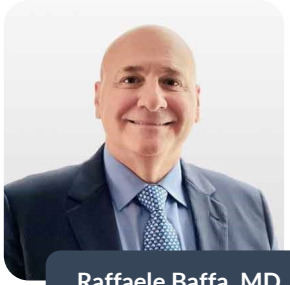
Experienced Management Team

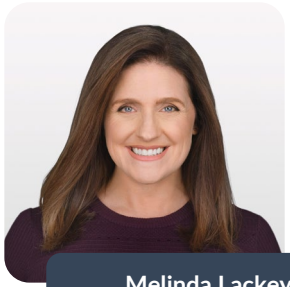


Kevin S. Boyle, Sr.
Chief Executive Officer

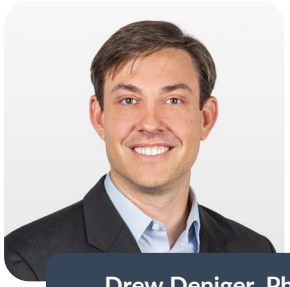
Ellee de Groot, PhD
EVP Operations



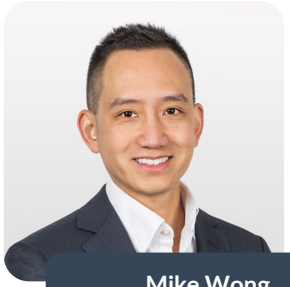
Raffaele Baffa, MD, PhD
Chief Medical Officer



Melinda Lackey
SVP Legal



Drew Deniger, PhD
VP Research & Development



Mike Wong
VP Finance

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