



**Umoja**  
BIOPHARMA

# Your Body. Your Hope. Your Cure.

**Retooling Your Immune System  
In Vivo to Fight Cancer**

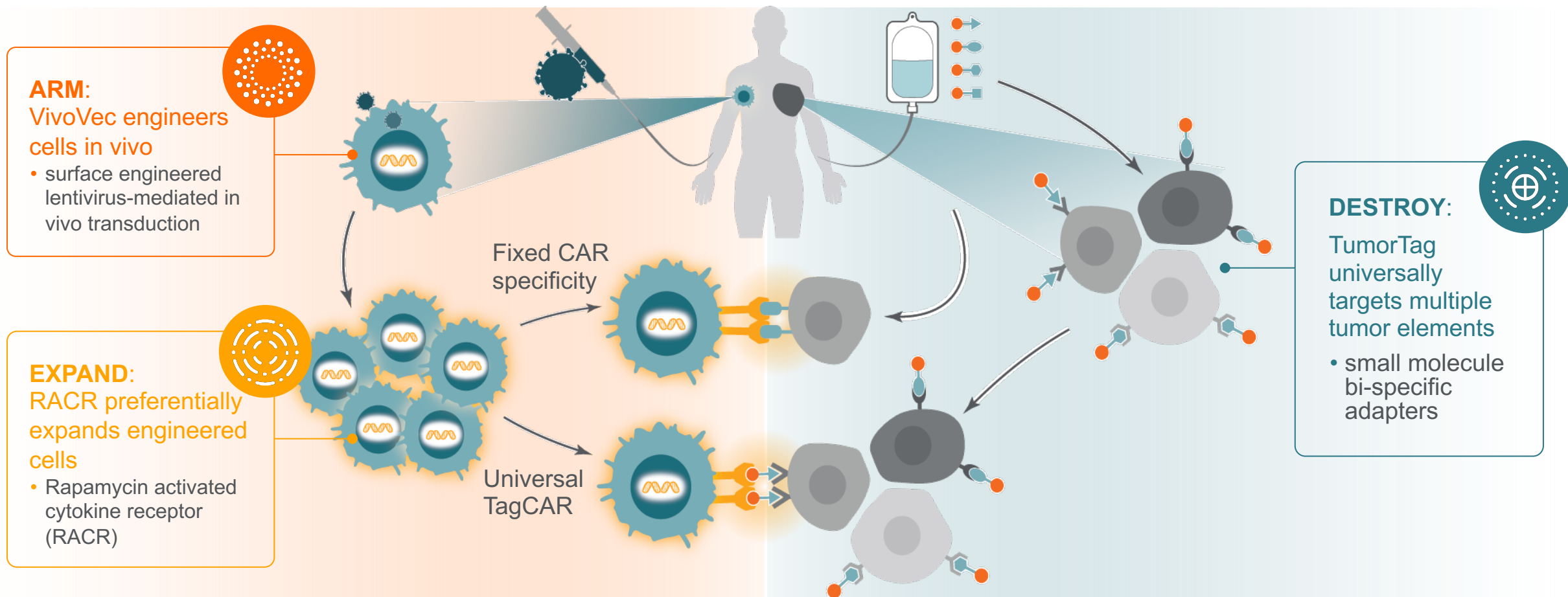
Multifunctional Cell Therapies Summit, May 2021



**Our mission is to advance and improve access to immunotherapy by retooling the patient's immune system in vivo, freeing them from the burden of cancer in their daily lives**

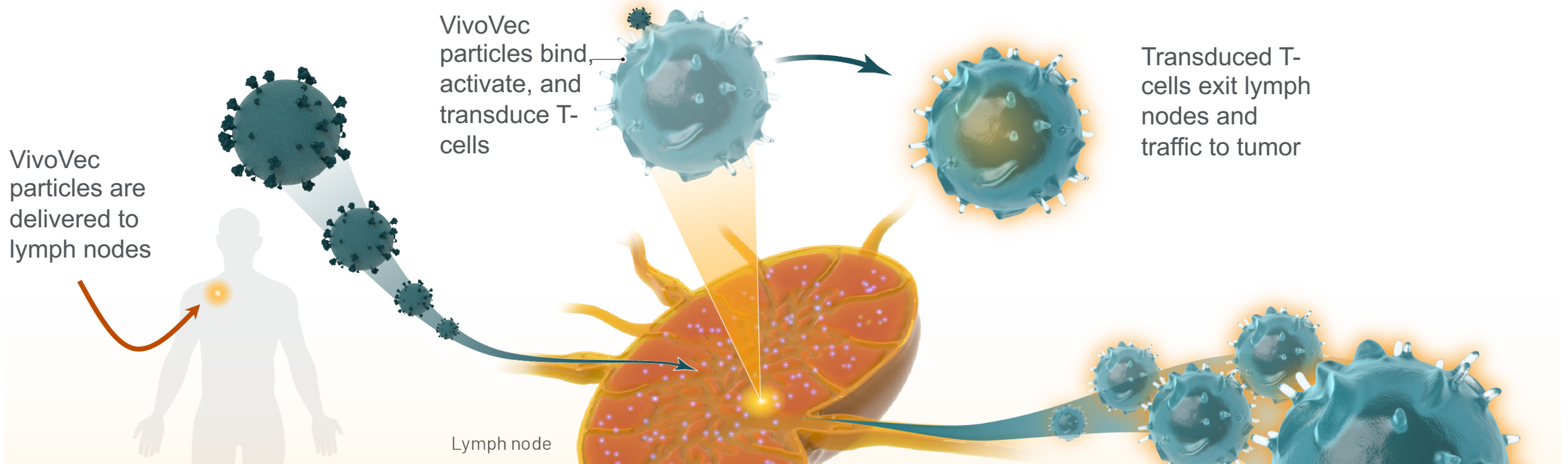


# Umoja's integrated immunotherapy platform provides solutions to the challenges in both blood and solid tumor CAR-T therapies



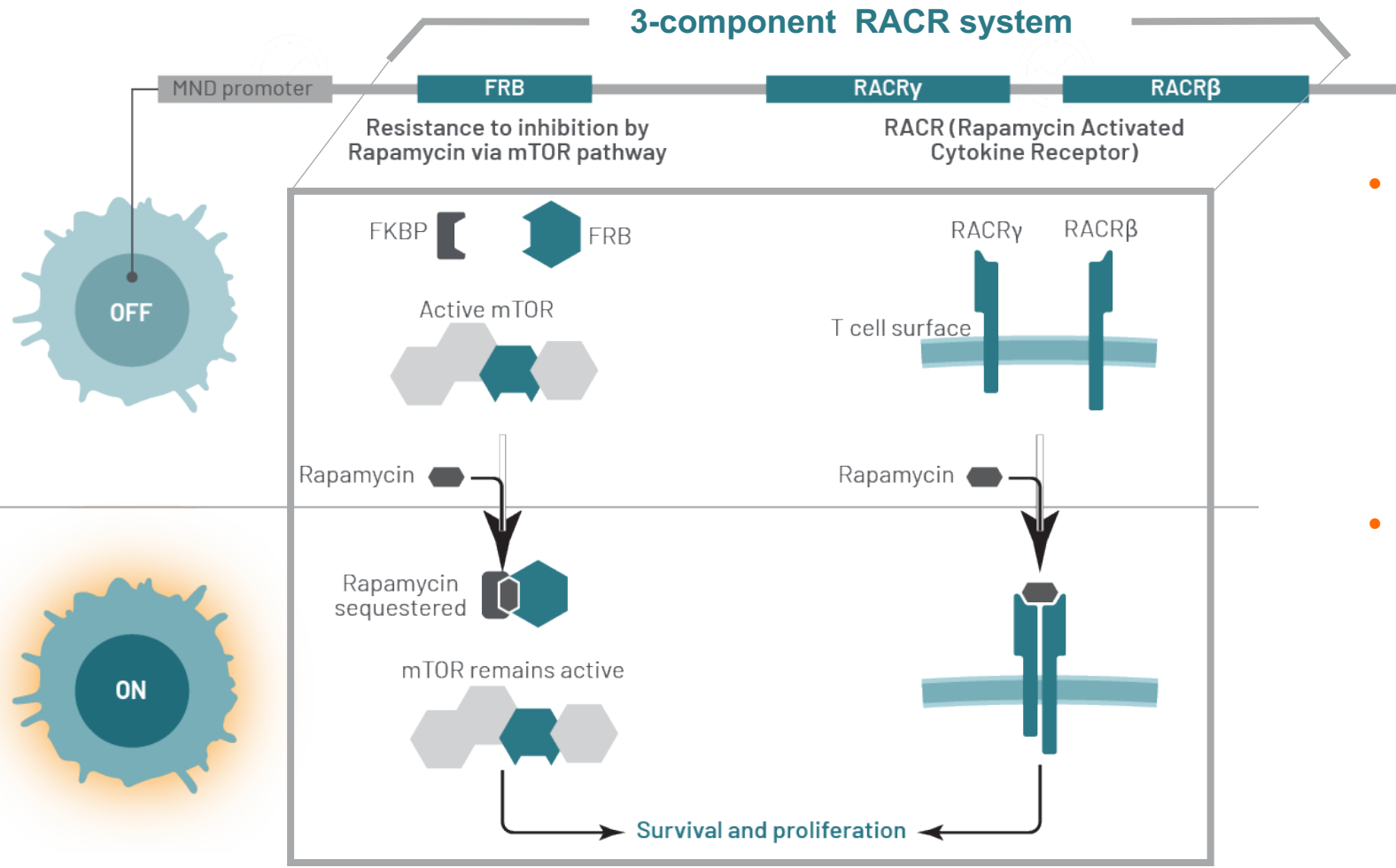
# Foundational concept: lymph nodes are nature's optimized T cell "manufactory"

Umoja leverages a deep understanding of the human immune system's physiology for its proprietary approach to *in vivo* T cell engineering



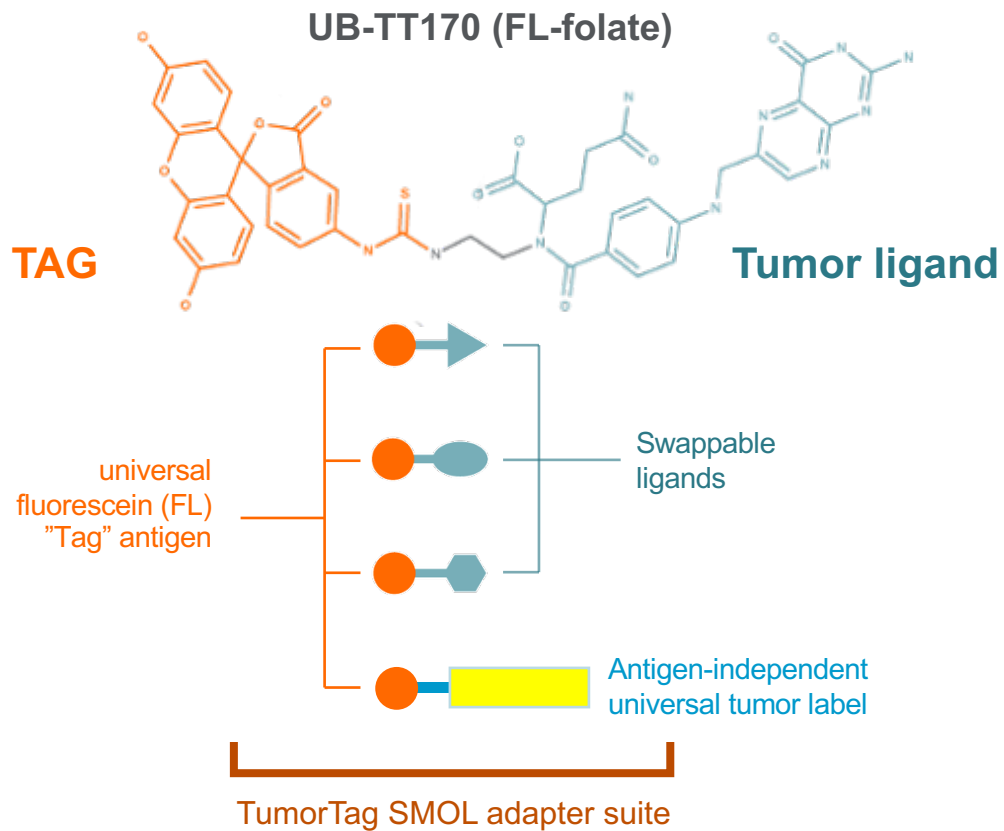
# RACR: Rapamycin Activated Cytokine Receptor provides control over expansion

RACR: In vivo CAR T cell expansion

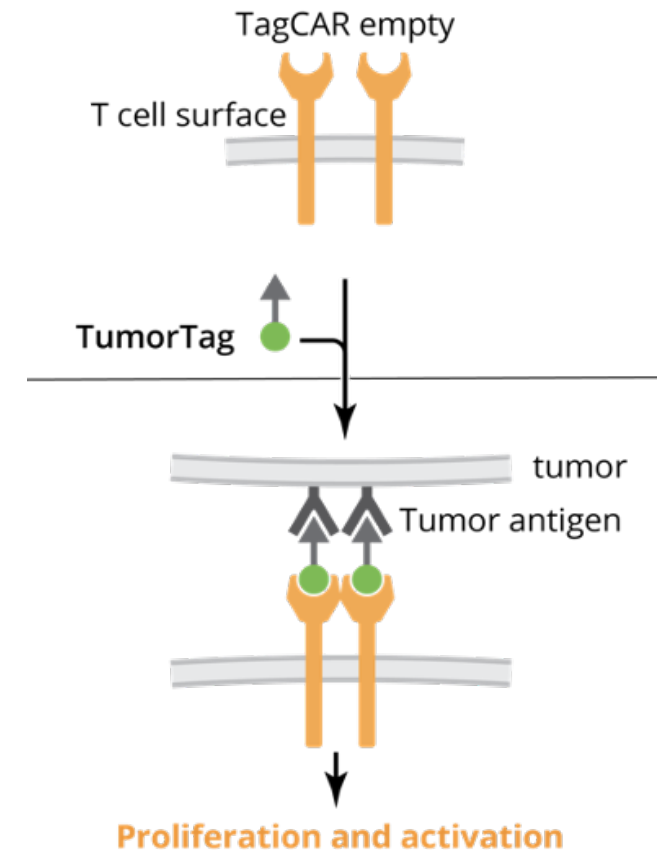


- Rapamycin activates the RACR system which replicates common  $\gamma$  chain cytokine activating STAT5 signaling for robust proliferation and survival
- Naked intracellular FRB domain provides rapamycin resistance to transduced cells while non transduced T and B cells are repressed through mTOR inhibition

# TumorTag platform: SMOL adapters for targeting of tumor and stroma

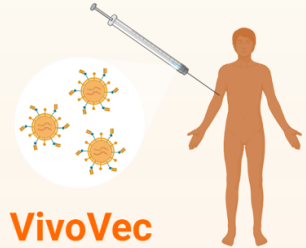


TagCAR T-cells target tumor or stroma via "Tag" adapter bound to surface antigen

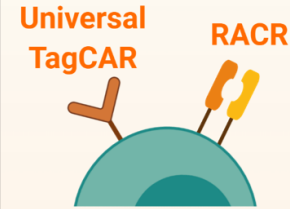
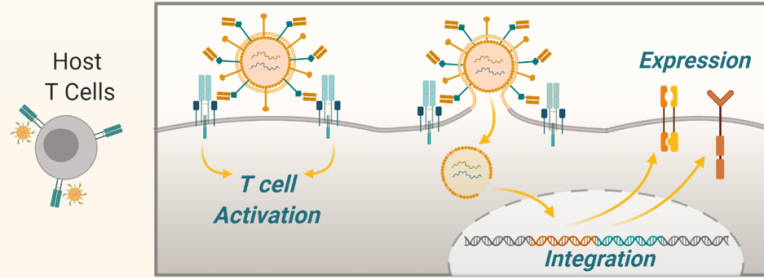


# Umoja's immunotherapy platform is designed to effectively and safely retool the patient's immune system against cancer

ARM

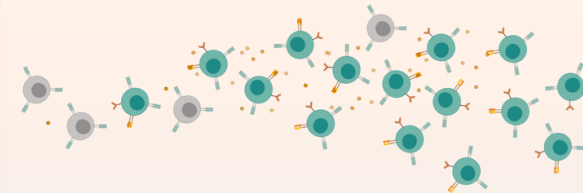
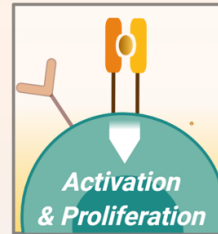
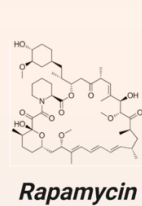
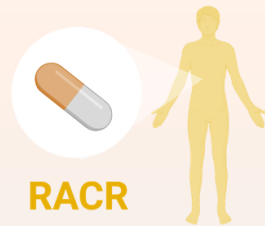


## VivoVec Genetic Engineering of Host T cells

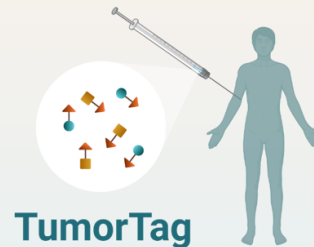


## RACR Controlled Expansion and Persistence of CAR T cells

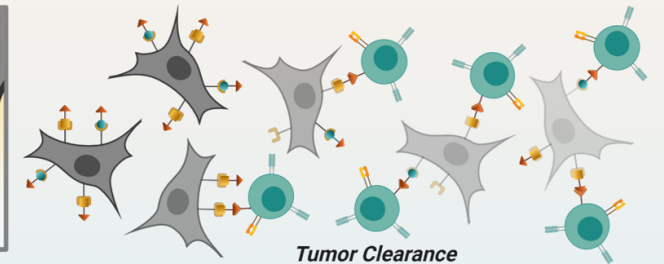
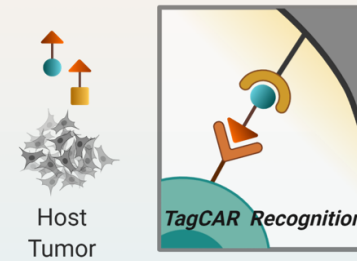
EXPAND



DESTROY



## TumorTag Targeting of Heterogenous Tumor & Microenvironment





# Thank you

[UMOJA-BIOPHARMA.COM](http://UMOJA-BIOPHARMA.COM)

