

# An optimization layer for existing CAR-T therapies

NanoKar is not a competing CAR-T. Our ITAM tuning platform works inside the CD3 $\zeta$  signaling domain that every approved CAR-T shares, addressing the persistence and toxicity barriers limiting the field today, with preclinical signs of efficacy in solid tumors.

## THE CHALLENGE



**Limited persistence:** 30–60% of hematological malignancies relapse as CAR-T cells exhaust before clearing the cancer.



**Severe toxicity:** 46% of patients show severe cytokine release syndrome; up to 9.1% progress to fatal outcomes.



**Solid tumors:** Only a 9–15% complete-response rate across all solid-tumor trials — a vast unmet need.

## THE PLATFORM



### Tunable Toxicity

Dial T-cell reactivity up or down at the signaling source to control CRS risk.



### Enhanced Persistence

Long-lived memory T cells with reduced exhaustion markers (PD-1, Tim-3, Lag-3).



### Any CAR, Any Tumor

Integrates into any CAR specificity — T, NK, macrophage — including solid tumors.

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Tunable ITAM variants

100%

Survival across 5 re-challenges (n=8)

\$2.88M

Non-dilutive NIH funding

## PRECLINICAL VALIDATION

Lead  $\zeta$ -ITAM construct in a CD19 xenograft B-ALL model, tested across five consecutive tumor re-challenges from a single dose.



**100% survival** Tumors cleared through all five sequential re-challenges.



**Reduced exhaustion** Lower PD-1, Tim-3, and Lag-3 — a predictor of durability.



**Durable memory** Elevated IL-7R<sup>+</sup> CD4<sup>+</sup> memory populations.



**Sustained activity** Cytokine production maintained at 29 days.

## PIPELINE

Target	Indication	Stage
CD19	B-cell malignancies (B-ALL, lymphoma)	Preclinical
HER2	Breast cancer (solid tumor)	Discovery
GD2	Glioblastoma (solid tumor)	Discovery
Nectin4 / EGFRvIII / B7-H3 / BCMA	Bladder, TNBC, ovarian, myeloma	In development

## TRACTION & IP



**Patent filed** Non-provisional application 19/198,917; filed May 2025.



**Funded** \$2.88M NIH + \$125K Utah seed; DoD under review.



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**Publishing** Peer-reviewed manuscript under revision (2026).

## What's Next

Advancing the lead CD19 program and expanding the platform across solid-tumor targets, with near-term efficacy readouts and preclinical model expansion toward IND-enabling studies.

**Full data package and mutual NDA available on request.**