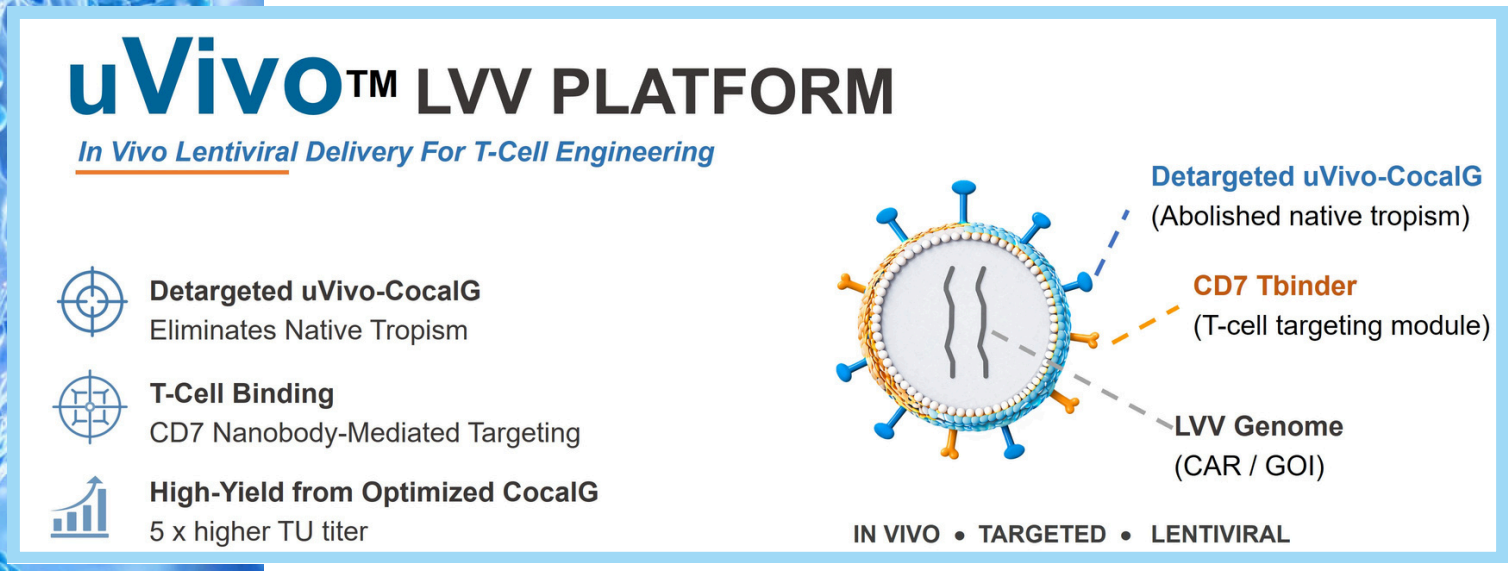
uVivo™ LVV PLATFORM

An IND-Ready In Vivo CAR-T Technology

The uVivo™ LVV platform enables specific and rapid in vivo generation of CAR-T cells.

Precise T-cell delivery is achieved through dual engineering: detargeted uVivo-CocalG and CD7 nanobody–mediated retargeting.



- **In vivo CAR-T generation**
  Direct T-cell programming with no ex vivo processing required.
- **Precise T-cell targeting**
  Detargeted uVivo-CocalG with CD7 nanobody targeting.
- **High specificity with minimal off-target transduction**
  Selective delivery to T cells with no expression in other organs.
- **Validated in vivo efficacy**
  Demonstrated antitumor activity in preclinical models.

Check our uVivo™ LVV Page

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Detargeted uVivo-CocalG Eliminates Native Tropism, Engineered from Optimized Ubri-CocalG

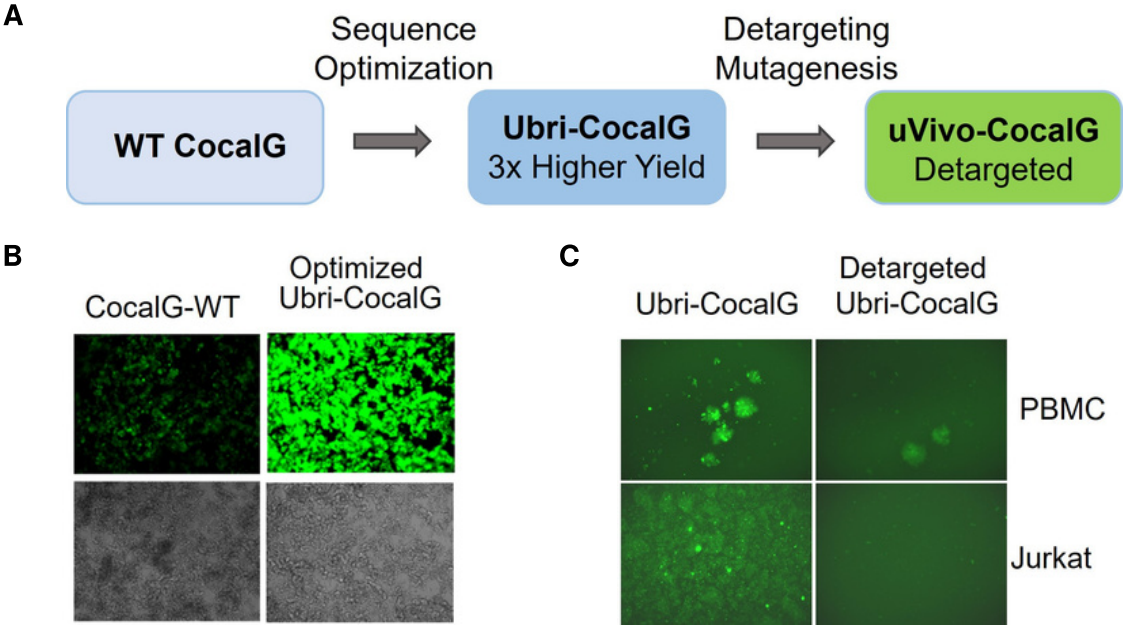


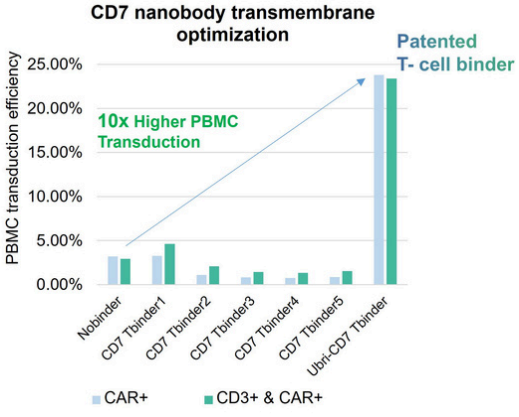
Fig. 1. ***A. The detargeted uVivo-CocalG engineering flow****.*

B. Sequence-optimized Ubri-CocalG *shows ~3× higher gene expression than the wild type in 293T cells (24 h post-transduction).*

C. Detargeted uVivo-CocalG *eliminates native tropism. GFP LVVs pseudotyped with Ubri-CocalG or uVivo-CocalG were used to transduce PBMCs or Jurkat cells.*

Specific T Cell Targeting Mediated by CD7 Nanobody

A



B

Cell Types	Non-Treated PBMCs	uVivo LVV Treated PBMCs
CD3+	67.18%	67.2%
CD19+	10.67%	13.16%
CAR+, CD3+	0.34%	**44.98%**
CAR+, CD19+	0.89%	1.05%

Fig. 2. **A. Optimized CD7 transmembrane domain**. Ubri-CD7 binder achieves ~10× higher PBMC transduction (flow cytometry: CAR^+ blue, $CD3^+CAR^+$ green).

B. uVivoTM LVV Enables Selective Transduction of T Cells PBMCs were treated with or without uVivoTM LVV anti-BCMA vectors, and marker expression was assessed by flow cytometry.

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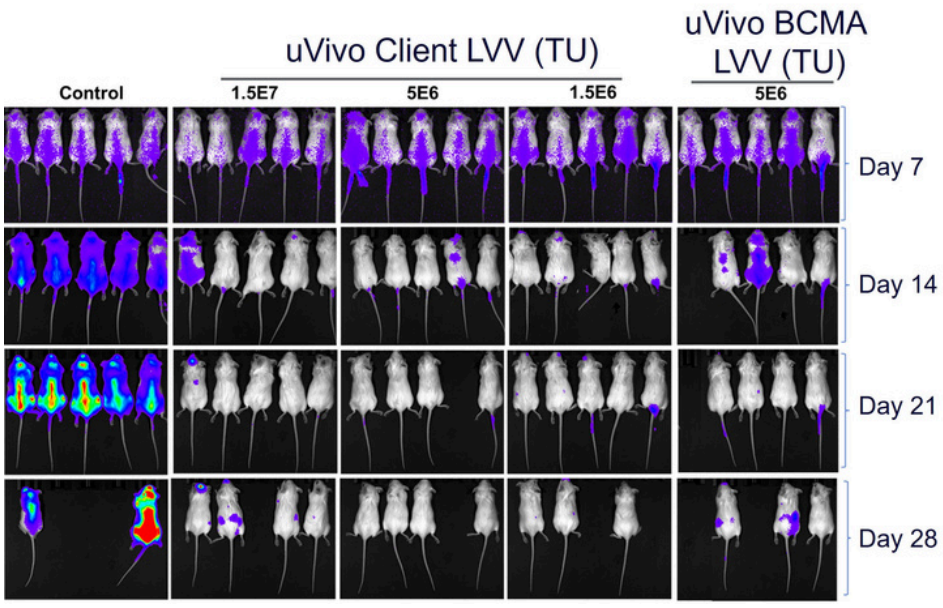
uVivo™ BCMA LVVs Achieve Antitumor Efficacy with No off-Targeting in a Myeloma Mouse Model

A

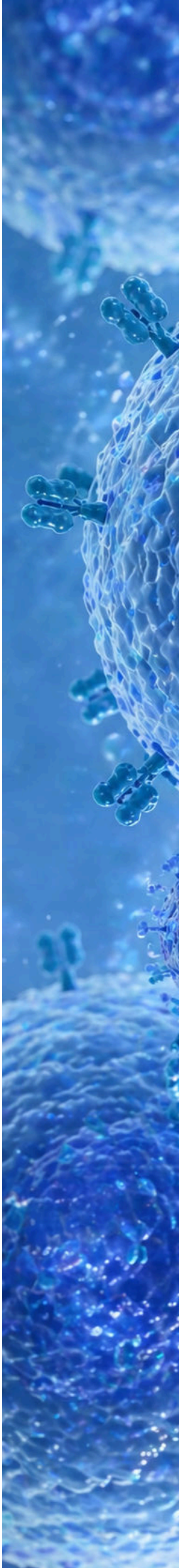


B

Mouse	Organs	VCN (Copies/Cell)
BCMA 5E6	Lung	0.0004
	Muscle	0.0836
	Brain	0.0038
	Small intestine	0.0586
	Spleen	0.0019
	Liver	0.0011
	Kidney	0.002
	Heart	0.005
	Stomach	0.0144
	Bone	0.1424
Positive Control		7.865
Standard Recovery Rate: 95.1%		

Fig. 3. ***A. uVivo CAR-T Shows Efficacy in a Multiple Myeloma Mice Model****. NSG mice received luciferase-labeled myeloma cells (i.v.) and LVV treatment at three doses. Tumor burden was tracked by in vivo imaging.*

B. uVivo™ LVV shows no detectable off-target transduction in vivo*. uVivo LVV does not target other organs other than T cells. Vector copy number (VCN) per cell was determined by qPCR.*



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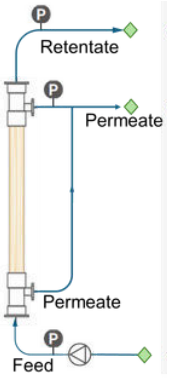
LVV Turbo™ GMP Lentivirus Production Platform

- 293TH cells deliver ~5× higher transduction titers than adherent 293T cells.
- The closed GMP-validated downstream workflow eliminates the need for final filtration, achieving up to 80% recovery

293TH Suspension Cells

5x Higher Productivity than 293T Cells

Fully-Closed Downstream



Up to **80%** LVV Final Recovery

High Productivity of the uVivoTM LVV Platform

uVivo™ LVV combined with LVV Turbo™ enables high-yield production of in vivo CAR vectors.

Titers measured in Jurkat cells and PBMCs support the generation of thousands of doses from a single 10 L batch (3E7 PBMC TU per dose).

CAR-GOI	Serotype	T-binder	Yield-Jurkat	Yield-PBMC	Doses from a 10L batch（3E7 PBMC TU/dose）
Client GOI	Ubri-CocalG	CD7 nanobody	8.47E10 TU/L	3.1E9 TU/L	1000 doses
Ubri-BCMA	Ubri-CocalG	CD7 nanobody	2.1E11 TU/L	2.1E10 TU/L	6333 doses

Clinical trial dose escalation: 3E7, 1E8, 3E8