DC60860 | L829

Instructions for Use

L829 is a novel ionizable cationic lipid specifically engineered for targeted lipid nanoparticles (tLNPs) that enables efficient in vivo delivery of mRNA payloads to CD8+ T cells. Designed to overcome limitations of conventional LNPs, L829 significantly reduces off-target delivery to the liver and exhibits rapid clearance compared to benchmark lipids like ALC-0315, while demonstrating enhanced biodegradability and tolerability in rodent and primate models. When incorporated into CD8-targeted tLNPs, L829 enables preferential transfection of CD8+ T cells over other immune subsets, facilitating the generation of functional anti-CD19 or anti-CD20 CAR T cells directly *in vivo*. These tLNP-engineered CAR T cells mediate rapid, deep B-cell depletion in humanized mice and cynomolgus monkeys, with repopulating B cells exhibiting a naïve phenotype suggestive of immune reset. By eliminating the need for ex vivo manufacturing or lymphodepleting chemotherapy, the L829-tLNP platform represents a safer, scalable approach for accessible CAR T therapy in oncology and autoimmune diseases.

Product information

CAS No.	Not available
Chemical Name	L829
Formula	C55H100O14N2
M.Wt	1,013.40
Purity	98%
Storage	Original product: up to 1 year under the storage conditions stated on the vial, kept tightly sealed. Stock solutions: aliquots at -20°C, generally up to one month.
Shipping condition	Ships from Shanghai. Pure lipid is stable during ice-pack transport.

Formulation & study context

Literature values apply to the cited study only. Administration routes describe research, not clinical instructions.

A complete product-specific formulation has not been verified. No standard ratio is substituted.

N/P ratio	Not reported in the verified record
Cargo	Not available in the verified record
Administration route	Not available in the verified record
Animal model	Not available in the verified record
Formulation process	Not available in the verified record

N/P is a nitrogen-to-phosphate molar ratio. Lipid:cargo mass ratio is a different quantity and must not be used as N/P.

Stock-solution preparation table

Calculated using product-page MW: 1013.4 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	9.868 mL	1.974 mL	0.987 mL
25 mg	24.669 mL	4.934 mL	2.467 mL
50 mg	49.339 mL	9.868 mL	4.934 mL
100 mg	98.678 mL	19.736 mL	9.868 mL
250 mg	246.694 mL	49.339 mL	24.669 mL

Volume (mL) = mass (mg) × 1000 / [MW (g/mol) × concentration (mM)]. Mathematical conversions only; not measured solubility. Confirm solvent compatibility and the exact material before preparation.

Handling & storage

Provided that storage conditions are as stated on the product vial and the vial is kept tightly sealed, the product can be stored for up to 1 year.

Wherever possible, prepare and use solutions on the same day. If stock solutions must be prepared in advance, store them as aliquots in tightly sealed vials at -20°C. Generally, these will be usable for up to one month.

Before use, and prior to opening the vial, allow the product to equilibrate to room temperature for at least 1 hour.

References

Not available