

DC60925 | Lipid H5T5

Instructions for Use

H5T5 is a leading ionizable lipid nanoparticle (LNP) formulation optimized for in vivomRNA delivery, featuring a pKa of 6.51, a size of ~154 nm, and a narrow polydispersity index (PDI) of 0.05. It demonstrated superior in vitromRNA transfection efficiency in primary immune cells, such as bone marrow-derived macrophages. Following intravenous administration, H5T5 exhibits precise organotropism, predominantly targeting the spleen and bone marrow, where it effectively delivers mRNA to a broad spectrum of immune cells, including macrophages, dendritic cells, T cells, B cells, and NK cells. This capability enables its core application: the in vivogeneration of "pan-CAR" immune cells. When loaded with anti-HER2 CAR mRNA, the H5T5-based therapy achieved potent tumor regression and prolonged survival in multiple solid tumor models. Preliminary safety assessments indicated a manageable cytokine profile and no significant organ toxicity, positioning it as a promising platform for in vivocell engineering.

Product information

CAS No.	Not available
Chemical Name	Lipid H5T5
Formula	C62H105O6N3
M.Wt	988.54
Purity	ELSD-HPLC>95%
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: 988.54 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	10.116 mL	2.023 mL	1.012 mL
25 mg	25.290 mL	5.058 mL	2.529 mL
50 mg	50.580 mL	10.116 mL	5.058 mL
100 mg	101.159 mL	20.232 mL	10.116 mL
250 mg	252.898 mL	50.580 mL	25.290 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

Lipid nanoparticle-mediated in vivo generation of panCAR immune cells for solid tumor immunotherapy-Qimeng Yin, Xue Liang, Chenchen Zhang etl. PNAS 123 (8) e2509698123