

DC68023 | Lipid 1A7B13

Instructions for Use

1A7B13 is a top-performing "tripod-like" lung-targeting (LuT) lipid. It forms lipid nanoparticles (LNPs) that, after intravenous injection, deliver genetic medicines (like mRNA and CRISPR-Cas9) to the lungs with over 90% selectivity, particularly favoring epithelial cells. Compared to the benchmark DOTAP LNPs, 1A7B13 LNPs achieve a 25.5-fold increase in mRNA delivery and a 9.2-fold improvement in gene-editing efficiency within the lungs. Its therapeutic potential was demonstrated by successfully delivering IL-10 mRNA to treat acute lung injury in mice.

Product information

CAS No.	Not available
Chemical Name	Lipid 1A7B13
Formula	C ₆₅ H ₁₃₀ O ₄ N ⁺
M.Wt	989.76
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: 989.76 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	10.103 mL	2.021 mL	1.010 mL

Mass	1 mM	5 mM	10 mM
25 mg	25.259 mL	5.052 mL	2.526 mL
50 mg	50.517 mL	10.103 mL	5.052 mL
100 mg	101.035 mL	20.207 mL	10.103 mL
250 mg	252.586 mL	50.517 mL	25.259 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

Zeru Tian, Xu Wang, Sumanta Chatterjee, et al. Tripod-like lung-targeting (LuT) lipids for highly efficient and selective LNPs for gene delivery and editing. Nature Biomedical Engineering, 2026. doi: 10.1038/s41551-026-01615-9