

DC68179 | A5-CE-C7-6

Instructions for Use

A5-CE-C7-6 is an ionizable lipid engineered for spleen-targeted mRNA delivery, integrating a hydroxylated dual-amine core (A5) for enhanced mRNA binding and endosomal escape, a biodegradable carbonate ester linker (CE) enabling rapid hydrolysis (61% degradation in 24 h), and branched heptyl hydrophobic tails (C7-6) that optimize nanoparticle stability and spleen tropism. When formulated into cholesterol-free lipid nanoparticles (B-8 formulation), its unique architecture—combining hydroxyl groups for cellular uptake, carbonate-mediated biodegradability, and branched-chain fluidity—achieves unprecedented efficiency: low pKa (~6.0) minimizes liver accumulation while enabling 21% transfection of splenic NK cells, outperforming benchmark systems like MC3 SORT LNPs by >10-fold in spleen-specific delivery and establishing a new standard for in vivo immune cell engineering.

Product information

CAS No.	Not available
Chemical Name	A5-CE-C7-6
Formula	Not available
M.Wt	689.7
Purity	>98% by ELSD HPLC
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: 689.7 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	14.499 mL	2.900 mL	1.450 mL
25 mg	36.248 mL	7.250 mL	3.625 mL
50 mg	72.495 mL	14.499 mL	7.250 mL
100 mg	144.991 mL	28.998 mL	14.499 mL
250 mg	362.476 mL	72.495 mL	36.248 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

Carbonate-Bearing Ionizable Lipids for mRNA Delivery to the Spleen and Immune Cells[J]. Journal of the American Chemical Society, 2025. DOI: 10.1021/jacs.5c01389.