

DC60809 | 6Ac1-C12

Instructions for Use

6Ac1-C12 is an ionizable cationic lipid with a hexaester degradable core and six C12 hydrophobic alkyl tails, featuring a pKa around 6.0 and strong endosomal escape capacity. Its four-component LNPs deliver mRNA mainly to liver endothelial cells after IV injection and remain stable for 30 days at 4°C. Formulated without cholesterol, its three-component system enables lung-targeted delivery with low in vivo toxicity, and the ester core facilitates biodegradation for versatile mRNA applications.

Product information

CAS No.	Not available
Chemical Name	6Ac1-C12
Formula	C104H204O13N6
M.Wt	1,746.81
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: 1746.81 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	5.725 mL	1.145 mL	0.572 mL

Mass	1 mM	5 mM	10 mM
25 mg	14.312 mL	2.862 mL	1.431 mL
50 mg	28.624 mL	5.725 mL	2.862 mL
100 mg	57.247 mL	11.449 mL	5.725 mL
250 mg	143.118 mL	28.624 mL	14.312 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

GAO X, et al. Reformulating lipid nanoparticles for organ-targeted mRNA accumulation and translation[J]. Nature Communications, 2024, 15(1): 5740.