

DC67617 | iChol15-C4A2

Instructions for Use

iChol15-C4A2 is a groundbreaking ionizable cholesteryl lipid, expertly designed to overcome the primary challenge of liver-centric accumulation in mRNA therapeutics. Its innovative "two-in-one" structure seamlessly integrates cholesterol with an ionizable headgroup, enabling the formation of stable, three-component Lipid Nanoparticles (Tc-LNPs). The key advantage of Tc-LNPs formulated with iChol15-CA2 is their significantly reduced adsorption of Apolipoprotein E (ApoE). This unique property directly attenuates ApoE/LDLR-mediated uptake by liver cells, dramatically shifting biodistribution toward extrahepatic tissues. Peer-validated research demonstrates a remarkable 20-50 fold increase in the spleen-to-liver mRNA expression ratio compared to standard LNPs like ALC-0315, unlocking unparalleled potential for targeting the immune system.

Beyond its superior targeting capability, iChol15-C4A2 ensures high mRNA encapsulation efficiency, excellent colloidal stability, and proven biocompatibility. It offers a powerful, off-the-shelf solution to advance next-generation mRNA applications, from innovative vaccines and cancer immunotherapies to treatments for splenic disorders. Discover how iChol15-C4A2 can transform your delivery platform.

Product information

CAS No.	Not available
Chemical Name	iChol15-C4A2
Formula	C70H127O7N
M.Wt	1,094.79
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: 1094.79 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	9.134 mL	1.827 mL	0.913 mL
25 mg	22.835 mL	4.567 mL	2.284 mL
50 mg	45.671 mL	9.134 mL	4.567 mL
100 mg	91.342 mL	18.268 mL	9.134 mL
250 mg	228.354 mL	45.671 mL	22.835 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

Teng, Yilong, et al. "Computationally Aided Design of Ionizable Cholesteryl Lipids for Lipid Nanoparticles to Modulate Hepatic mRNA Accumulation." Journal of the American Chemical Society, 2025, doi:10.1021/jacs.5c14870.