

DC67653 | Imidazole cholesteryl Ester ICE

Instructions for Use

****Imidazole cholesterol ester (ICE)**** is a sterol-based ionizable cationic lipid invented by Translate-Bio (WO2018/089790 A1) for mRNA-loaded lipid-nanoparticle (LNP) pulmonary delivery. It fuses an imidazole pH-responsive headgroup with cholesterol via ester linkage. Typically formulated as a three-component LNP (ICE : DOPE : DMG-PEG2K = 60 : 35 : 5 mol ratio), ICE-LNPs achieve high mRNA encapsulation (>80-90 %), good nebulization stability and low toxicity. Upon cellular uptake, imidazole mediates endosomal escape; the ester bond degrades to yield cholesterol, conferring favorable biocompatibility. Animal studies demonstrate robust CFTR protein expression in bronchial and alveolar lung tissue after inhalation, making ICE promising for cystic-fibrosis mRNA therapy.

Product information

CAS No.	Not available
Chemical Name	Imidazole cholesteryl Ester ICE
Formula	Not available
M.Wt	Not available
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: not available g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	MW unavailable	MW unavailable	MW unavailable
25 mg	MW unavailable	MW unavailable	MW unavailable
50 mg	MW unavailable	MW unavailable	MW unavailable
100 mg	MW unavailable	MW unavailable	MW unavailable
250 mg	MW unavailable	MW unavailable	MW unavailable

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

Not available