

DC67518 | Lipid SL02

Instructions for Use

SL02 is a next-generation ionizable lipid featuring a unique branched hydrophobic domain and a pH-sensitive dimethylaminoethyl headgroup (pKa 6.25) developed by Seqirus. Its asymmetric lipid tails, combining unsaturated and saturated chains, enhance LNP fusogenicity and endosomal membrane disruption. With a slightly lower pKa than SL01, SL02 achieves efficient mRNA binding at acidic pH while maintaining neutral charge in circulation, reducing nonspecific interactions. In vitro, SL02-LNPs show superior transfection potency in BHK-V cells, attributed to improved cellular uptake and endosomal escape kinetics. In vivo, it elicits high neutralizing antibody titers (comparable to MF59-adjuvanted vaccines) and robust CD8+ T-cell activation. The lipid's ester-based design ensures biodegradability, while PEGylation compatibility enhances colloidal stability. SL02's tailored balance of hydrophobicity and ionization enables precise control over nanoparticle size (70–120 nm) and low polydispersity, positioning it as a leading candidate for saRNA-based vaccines and gene therapies.

Product information

CAS No.	Not available
Chemical Name	Lipid SL02
Formula	C37H73O4N
M.Wt	595.99
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: 595.99 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	16.779 mL	3.356 mL	1.678 mL
25 mg	41.947 mL	8.389 mL	4.195 mL
50 mg	83.894 mL	16.779 mL	8.389 mL
100 mg	167.788 mL	33.558 mL	16.779 mL
250 mg	419.470 mL	83.894 mL	41.947 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

Not available