

DC67633 | Lipid KEL12

Instructions for Use

(4S)-KEL12 is a novel, biodegradable ionizable lipid developed for advanced mRNA vaccine delivery. It was rationally designed by incorporating both a ketal group in the linker and ester segments in the hydrophobic tails, a dual-degradable strategy aimed at enhancing its safety profile. Through iterative optimization, (4S)-KEL12 was identified as a lead candidate with an optimal pKa value of approximately 6.78, which is crucial for efficient mRNA encapsulation and endosomal release.

Product information

CAS No.	Not available
Chemical Name	Lipid KEL12
Formula	C49H95O6N
M.Wt	794.30
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: 794.3 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	12.590 mL	2.518 mL	1.259 mL

Mass	1 mM	5 mM	10 mM
25 mg	31.474 mL	6.295 mL	3.147 mL
50 mg	62.949 mL	12.590 mL	6.295 mL
100 mg	125.897 mL	25.179 mL	12.590 mL
250 mg	314.743 mL	62.949 mL	31.474 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