

DC68151 | KC-34(SPC-A9)

Instructions for Use

KC-34 (SPC-A9) is a novel stereopure, diketopiperazine-based ionizable cationic lipid engineered to overcome traditional liver-restricted delivery, achieving balanced multi-organ mRNA transfection. Upon systemic intravenous administration, its precisely optimized chiral configuration allows the lipid nanoparticles (LNPs) to efficiently cross endothelial barriers and target the bone marrow, offering immense therapeutic potential for in vivo hematopoietic stem cell gene editing. Concurrently, KC-34 mediates robust and long-lasting protein expression in the spleen and lungs with minimal hepatic off-target toxicity. Its stable structure provides excellent biocompatibility and high in vivo tolerance, making it ideal for systemic, multi-dose mRNA therapies.

Product information

CAS No.	Not available
Chemical Name	KC-34(SPC-A9)
Formula	C50H98N6O4
M.Wt	846.76
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: 846.76 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	11.810 mL	2.362 mL	1.181 mL
25 mg	29.524 mL	5.905 mL	2.952 mL
50 mg	59.049 mL	11.810 mL	5.905 mL
100 mg	118.097 mL	23.619 mL	11.810 mL
250 mg	295.243 mL	59.049 mL	29.524 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

Hatit M Z C, Lokugamage M P, Dobrowolski C N, et al. Substituting racemic ionizable lipids with stereopure ones improves the efficiency of lipid nanoparticles for mRNA delivery[J]. Nature Biomedical Engineering, 2023, 7(2): 134-146.