

DC60508 | 4A3-SCC-10

Instructions for Use

4A3-SCC-10 is a disulfide bond-containing biodegradable ionizable cationic lipid ($pK_a = 6.22$) that has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA in vitro and in vivo. LNPs containing 4A3-SCC-10 and encapsulating a Cy5-RNA reporter have improved endosomal escape ability over Cy5-RNA-encapsulated LNPs containing 4A3-SC-10, which does not contain disulfide bonds, in HeLa cells. Intravenous administration of LNPs containing 4A3-SCC-10 and encapsulating an mRNA luciferase reporter selectively accumulate in mouse liver.

Product information

CAS No.	Not available
Chemical Name	4A3-SCC-10
Formula	C ₉₁ H ₁₇₁ N ₃ O ₁₆ S ₁₂
M.Wt	1,948.1
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: 1948.1 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	5.133 mL	1.027 mL	0.513 mL

Mass	1 mM	5 mM	10 mM
25 mg	12.833 mL	2.567 mL	1.283 mL
50 mg	25.666 mL	5.133 mL	2.567 mL
100 mg	51.332 mL	10.266 mL	5.133 mL
250 mg	128.330 mL	25.666 mL	12.833 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

1. Ansell, S.M., and Du, X. Lipids and lipid nanoparticle formulations for delivery of nucleic acids. US 10,166,298 B2, (2019).
2. Lin, J.C.P., and Tam, Y. Lipid delivery of therapeutic agents to adipose tissue. (2018).
3. Sahin, U., Lindemann, C., Diekmann, J., et al. RNA compositions targeting claudin-18.2. (2021).