

DC57100 | Acuitas A9

Instructions for Use

Lipid A9 is an ionizable cationic lipid ($pK_a = 6.27$) that has been used in the generation of lipid nanoparticles (LNPs) for the delivery of mRNA and siRNA in vivo. LNPs containing lipid A9 and encapsulating non-stimulatory siRNA increase plasma levels of chemokine (C-C motif) ligand 2 (CCL2), indicating activation of the innate immune response, and decrease body weight in mice.

Product information

CAS No.	Not available
Chemical Name	Acuitas A9
Formula	C57H112N2O5
M.Wt	905.51
Purity	>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: 905.51 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	11.044 mL	2.209 mL	1.104 mL
25 mg	27.609 mL	5.522 mL	2.761 mL

Mass	1 mM	5 mM	10 mM
50 mg	55.218 mL	11.044 mL	5.522 mL
100 mg	110.435 mL	22.087 mL	11.044 mL
250 mg	276.088 mL	55.218 mL	27.609 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. Buschmann, M.D., Carrasco, M.J., Alishetty, S., et al. Nanomaterial delivery systems for mRNA vaccines. *Vaccines (Basel)* 9(1), 65 (2021). 2. Holland, R., Lam, K., Jeng, S., et al. Silicon ether ionizable lipids enable potent mRNA lipid nanoparticles with rapid tissue clearance. *ACS Nano* 18(15), 10374-10387 (2024).