

DC60872 | Lipid A33-D268

Instructions for Use

A33-D268 is an ionizable lipid derived from a 2-aminoimidazole (AM) core, featuring an asymmetric hydrophobic tail structure designed to optimize mRNA interactions. Selected as the top candidate from a 21-lipid library through molecular dynamics (MD) simulations, it demonstrated superior performance: low root mean square deviation (RMSD) and the smallest radius of gyration (Rg), indicating tight mRNA compaction, alongside moderate electrostatic energy and above-average hydrogen bonding for stable encapsulation. Formulated into LNPs, it achieves efficient muscle-specific transfection post-intramuscular injection, rivaling commercial ALC-0315 LNPs. Crucially, it exhibits 29-fold lower hepatic off-target expression, attributed to its inability to leverage serum protein coronas for liver tropism.

Product information

CAS No.	Not available
Chemical Name	Lipid A33-D268
Formula	C42H80O4N4
M.Wt	705.13
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: 705.13 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	14.182 mL	2.836 mL	1.418 mL
25 mg	35.454 mL	7.091 mL	3.545 mL
50 mg	70.909 mL	14.182 mL	7.091 mL
100 mg	141.818 mL	28.364 mL	14.182 mL
250 mg	354.545 mL	70.909 mL	35.454 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