

DC59126 | Genevant CL1 (lipid 10)

Instructions for Use

Genevant CL1 (lipid 10) is a novel ionizable lipid for rna delivery. Lipid 10 rapidly accumulated in the liver within the first hour of dosing (reflecting LNP uptake), but levels then steadily declined over the ensuing 2 weeks period, similar to MC3. Lipid 10 afforded more than double the expression of either approved lipid. We also observed high splenic expression for ALC-0315, which correlated with higher MCP-1 levels. Animals received a single 5 µg IM dose of LNP encapsulating firefly luciferase (fLuc) mRNA. Whole body imaging was performed 6 h later and expression at the injection site quantified. Lipid 10, ALC-0315, and SM-102 showed similar expression at the injection site, all greater than the older generation benchmarks lipids (DLinDMA, KC2, MC3). Lipid 10 and ALC-0315 also showed high expression in the liver, while SM-102 was less, and more similar to MC3. Lipid 10-based LNP reported similar anti-HA IgG titers to MC3 and ALC-0315 (Comirnaty) LNP, and higher than the SM-102 (SpikeVax) LNP composition. MCP-1 levels were generally similar, although the ALC-0315 composition had a significantly higher response at the 5 µg dose. All formulations reported good stability when stored frozen at -80 °C or at 2-8 °C for 1 month.

Product information

CAS No.	Not available
Chemical Name	Genevant CL1 (lipid 10)
Formula	C39H73NO2
M.Wt	588.00
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: 588.0 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	17.007 mL	3.401 mL	1.701 mL
25 mg	42.517 mL	8.503 mL	4.252 mL
50 mg	85.034 mL	17.007 mL	8.503 mL
100 mg	170.068 mL	34.014 mL	17.007 mL
250 mg	425.170 mL	85.034 mL	42.517 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

Unsaturated, Trialkyl Ionizable Lipids are Versatile Lipid-Nanoparticle Components for Therapeutic and Vaccine Applications

Kieu Lam, Ada Leung, Alan Martin, Mark Wood, Petra Schreiner, Lorne Palmer, Owen Daly, Wenchen Zhao, Kevin McClintock, James Heye-- 21 January 2023 <https://doi.org/10.1002/adma.202209624>