

DC82125 | lipid 14

Instructions for Use

LIPID 14 is a novel ionizable lipid used for mRNA delivery. In 2021, Elia et al. used lipid 2 LNPs and lipid 14 LNPs to deliver mRNA encoding SARS-CoV-2 human Fc-conjugated receptor binding domain (RBDhFc mRNA). While both lipid 274 LNP RBD-hFc mRNA and lipid 14 LNP RBD-hFc mRNA induced equal cellular and humoral responses in mice at an mRNA dose of 5 µg, only lipid 14 LNP RBD-hFc mRNA exhibited strong immunogenicity following intradermal administration. Both intradermal administration and intramuscular administration of lipid 14 LNPs could activate antigen presenting cells (APCs), thus inducing cellular responses.

Product information

CAS No.	Not available
Chemical Name	lipid 14
Formula	C ₅₆ H ₁₁₀ N ₂ O ₆
M.Wt	907.48
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: 907.48 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	11.020 mL	2.204 mL	1.102 mL
25 mg	27.549 mL	5.510 mL	2.755 mL
50 mg	55.098 mL	11.020 mL	5.510 mL
100 mg	110.195 mL	22.039 mL	11.020 mL
250 mg	275.488 mL	55.098 mL	27.549 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 An Effective mRNA-LNP Vaccine Against the Lethal Plague Bacterium

Edo Kon, Dan Peer, Ofer Cohen-doi: biorxiv, <https://doi.org/10.1101/2022.08.07.503096>

||2 Elia, U.; Ramishetti, S.; Rosenfeld, R.; Dammes, N.; Bar-Haim,

E.; Naidu, G. S.; Makdasi, E.; Yahalom-Ronen, Y.; Tamir, H.; Paran, N.; et al. Design of SARS-CoV-2

hFc-Conjugated Receptor-Binding

Domain mRNA Vaccine Delivered via Lipid Nanoparticles. ACS

Nano 2021

||3 : A single-dose F1-based mRNA-LNP vaccine provides protection against the lethal plague bacterium

E Kon, Y Levy, U Elia, H Cohen, I Hazan-Halevy... - Science Advances, 2023