

DC67521 | Lipid TD5

Instructions for Use

TD5 is a tryptamine-derived ionizable cationic lipid used to prepare LNPs for mRNA delivery. In the reported formulation, TD5 supported pH-dependent mRNA encapsulation and CNS delivery after intrathecal administration. Reported performance values below remain tied to the stated formulation and study conditions; they should not be compared across methods without reviewing those conditions.

Product information

CAS No.	2855180-86-6
Chemical Name	Lipid TD5
Formula	C 45 H 81 N 3 O
M.Wt	680.16 g/mol
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	Pure lipid, shipped from Shanghai with ice packs.

Formulation & study context

Literature values apply to the cited study only. Administration routes describe research, not clinical instructions.

Component	mol%	Role
TD5	50.0	Ionizable lipid
DOPE	10.0	Helper phospholipid
Cholesterol	38.5	Membrane support
DMG-PEG2000	1.5	PEG lipid
Total	100.0	
N/P ratio	Not reported in accessible source	
Cargo	mRNA	
Administration route	Intrathecal injection (IT)	
Animal model	Mouse	
Dose	0.135 mg mRNA/kg	
Evaluation timepoint	See cited study	

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: 680.16 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	14.702 mL	2.940 mL	1.470 mL
25 mg	36.756 mL	7.351 mL	3.676 mL
50 mg	73.512 mL	14.702 mL	7.351 mL
100 mg	147.024 mL	29.405 mL	14.702 mL
250 mg	367.561 mL	73.512 mL	36.756 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

Cited literature for this formulation and performance dataset Xue Y, et al. Lipid Nanoparticles Enhance mRNA Delivery to the Central Nervous System Upon Intrathecal Injection. Advanced Materials . 2025;37(27):2417097. DOI: 10.1002/adma.202417097 · Read full text