

DC60964 | TTP-3

Instructions for Use

TTP-3 is an asymmetric Ugi-derived ionizable lipid identified from a 1,000-member library designed for pulmonary delivery of structured suppressor tRNA. In the cited study, TTP-3 was selected in a cystic-fibrosis-relevant air-liquid interface model containing artificial mucus, then evaluated in optimized LNP formulations for intratracheal delivery. All formulation and performance data below are literature-reported and remain specific to the stated cargo, preparation process, dose, model and administration route.

Product information

CAS No.	Not assigned
Chemical Name	TTP-3
Formula	C 51 H 97 N 3 O 4 (calculated from the literature-reported structure)
M.Wt	816.35 g/mol (calculated)
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
TTP-3	60.0	Ionizable lipid
DOPE	10.0	Helper phospholipid
β-Sitosterol	27.5	Sterol lipid
C14-PEG2000	2.5	PEG lipid
Total	100.0	
N/P ratio	Not reported in the cited study	
Lipid:cargo mass ratio	13.5:1	
Cargo	Suppressor tRNA	
Administration route	Intratracheal administration	
Animal model	LumA (FLuc R387X) mouse	

In vivo study dose	1.25 mg/kg · day 3 readout
Cell-tracking regimen	3 doses × 1 mg/kg

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: not available g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	MW unavailable	MW unavailable	MW unavailable
25 mg	MW unavailable	MW unavailable	MW unavailable
50 mg	MW unavailable	MW unavailable	MW unavailable
100 mg	MW unavailable	MW unavailable	MW unavailable
250 mg	MW unavailable	MW unavailable	MW unavailable

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 Chen J, Zhou M, Dong S, et al. Nonviral delivery of chemically modified tRNA rescues nonsense mutations in cystic fibrosis. Science . 2026;393:eaeb0054. DOI: 10.1126/science.aeb0054 Formulation: main text and Methods; performance: Fig. 3K, Fig. 4C-F, and supplementary Figs. S13-S14 and S18.