

DC60840 | Lipid F10T5

Instructions for Use

F10T5 is a furan-derived ionizable lipid developed for mRNA delivery to the central nervous system through the meningeal lymphatic pathway. Its architecture incorporates an ionizable polyamine region and four hydrophobic tails containing acid-sensitive acetal linkages. Following subcutaneous administration near the deep cervical lymph nodes, F10T5 LNPs enabled functional mRNA expression in neurons, microglia, and astrocytes while producing relatively low signals in peripheral organs. Cre mRNA delivery resulted in tdTomato expression in approximately 8.93% of neurons, 7.0% of microglia, and 9.9% of astrocytes in mice. Compared with the co-lead lipid F11T6, F10T5 showed comparable total brain luciferase expression, stronger astrocyte transfection, and lower peripheral-organ distribution. Its activity was associated primarily with improved endosomal escape rather than increased cellular uptake. F10T5 remains a preclinical research lipid, and its repeat-dose safety, pharmacokinetics, and performance in larger animals require further evaluation.

Product information

CAS No.	Not available
Chemical Name	Lipid F10T5
Formula	C66H134O9N2
M.Wt	1,099.80
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: 1099.8 g/mol. Volumes are final solution volumes.

Mass	1 mM	5 mM	10 mM
10 mg	9.093 mL	1.819 mL	0.909 mL
25 mg	22.731 mL	4.546 mL	2.273 mL
50 mg	45.463 mL	9.093 mL	4.546 mL
100 mg	90.926 mL	18.185 mL	9.093 mL
250 mg	227.314 mL	45.463 mL	22.731 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

Liu Z, Zhang Y, Li H, et al. Furan-Derived Lipid Nanoparticles for Transporting mRNA to the Central Nervous System. *Journal of the American Chemical Society*. 2025;147(19):16007–16017.