

NT1-O12B

Chemical Properties

CAS No. :	2739805-63-9
Formula:	C36H60N2O4S4
Molecular Weight:	713.14
Storage:	Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.

Biological Description

Description	NT1-O12B, an endogenous neurotransmitter-derived lipidoid (NT-lipidoid), serves as a highly efficient carrier for enhancing the transportation of various blood-brain barrier (BBB)-impermeable cargos to the brain. Incorporating NT1-O12B into BBB-impermeable lipid nanoparticles (LNPs) enables these LNPs to effectively traverse the BBB. In addition to enabling cargo passage through the BBB, NT-lipidoid formulations facilitate efficient delivery of the cargo into neuronal cells for purposes such as functional gene silencing or gene recombination[1].
Targets(IC50)	Others,Endogenous Metabolite,Liposome
In vitro	NT1-O12B indicates a lipidoid containing a tryptamine head group and a hydrophobic tail group containing 12 carbon atoms[1].
In vivo	The process encapsulates Amphotericin B (AmB) utilizing NT1-lipidoids—specifically NT1-O12B, NT1-O14B, NT1-O16B, and NT1-O18B following a method akin to DiR encapsulation. Among these, NT1-O12B serves as an effective dopant for brain delivery, demonstrating the highest DiR fluorescence intensity compared to the others. Integrating NT1-O12B with the blood-brain barrier (BBB)-impermeable lipidoid PBA-Q76-O16B produces an AmB formulation capable of crossing the BBB. This technique significantly enhances AmB presence in brain tissue, reaching concentrations up to 300 ng/g (AmB/tissue) and achieving a delivery efficiency of approximately 0.135% of the injected dose 24 hours post intravenous administration of AmB (5 mg/kg)[1].

Solubility Information

Solubility	DMSO: 200.00 mg/mL (280.45 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Corn Oil: 5.00 mg/mL (7.01 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4022 mL	7.0112 mL	14.0225 mL
5 mM	0.2804 mL	1.4022 mL	2.8045 mL
10 mM	0.1402 mL	0.7011 mL	1.4022 mL
50 mM	0.028 mL	0.1402 mL	0.2804 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Ma F, et al. Neurotransmitter-derived lipidoids (NT-lipidoids) for enhanced brain delivery through intravenous injection. *Sci Adv.* 2020;6(30):eabb4429. Published 2020 Jul 24.

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