Product Data Sheet

Product Name: NT1-O12B
Cat. No.: GC63119

Chemical Properties

Cas. No.	2739805-63-9		
Formula	$C_{36}H_{60}N_2O_4S_4$	M.Wt	713.13
Solubility	DMSO : 200 mg/mL (280.45 mM; Need ultrasonic)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	NT1-O12B		

Background

NT1-O12B, an endogenous chemical and a neurotransmitter-derived lipidoid (NT-lipidoid), is an effective carrier for enhanced brain delivery of several blood-brain barrier (BBB)-impermeable cargos. Doping NT1-O12B into BBB-impermeable lipid nanoparticles (LNPs) gives the LNPs the ability to cross the BBB. NT-lipidoids formulation not only facilitate cargo crossing of the BBB, but also delivery of the cargo into neuronal cells for functional gene silencing or gene recombination[1].

NT1-O12B indicates a lipidoid containing a tryptamine head group and a hydrophobic tail group containing 12 carbon atoms[1].

It encapsulates AmB in pure NT1-lipidoids (namely NT1-O12B, NT1-O14B, NT1-O16B, and NT1-O18B) using a procedure similar to the DiR encapsulation. NT1-O12B is the dopant for enhanced brain delivery because it shows the highest DiR fluorescence intensity among all NT-lipidoids. Doping NT1-O12B to the BBB-impermeable lipidoid PBA-Q76-O16B resulted in an AmB formulation that could cross BBB. Using this approach, the AmB concentration in the brain tissue reached as high as 300 ng/g (AmB/tissue) with a delivery efficiency of about 0.135% of injected dose after 24 hours of intravenous injection with AmB (5 mg/kg)[1].

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[1]. 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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