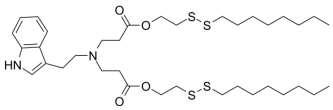
NT1-O12B

Cat. No.:	HY-137499
CAS No.:	2739805-63-9
Molecular Formula:	$C_{36}H_{60}N_2O_4S_4$
Molecular Weight:	713.13
Target:	Endogenous Metabolite; Liposome
Pathway:	Metabolic Enzyme/Protease
Storage:	Pure form -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 200 mg/mL (280.45 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.4023 mL	7.0113 mL	14.0227 mL
	5 mM	0.2805 mL	1.4023 mL	2.8045 mL
	10 mM	0.1402 mL	0.7011 mL	1.4023 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 5 mg/mL (7.01 mM); Suspended solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 5 mg/mL (7.01 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 5 mg/mL (7.01 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

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].

In Vitro

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

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[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.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA