Data Sheet (Cat.No.T72429)

TargetMol

α-Lipoic Acid sodium

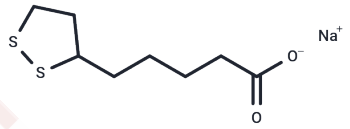
Chemical Properties

CAS No. : 2319-84-8

Formula: C8H13NaO2S2

Molecular Weight: 228.31

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	α-Lipoic Acid sodium (Thioctic acid sodium) is an antioxidant and essential cofactor for mitochondrial enzyme complexes. It inhibits NF-κB-dependent HIV-1 replication, induces endoplasmic reticulum stress-mediated apoptosis in hepatocellular carcinoma cells, and modulates SREBP-1, FOXO1, and Nrf2 to improve high-fat diet-induced hepatic steatosis.
Targets(IC50)	Apoptosis,Antioxidant,NF-κB,HIV Protease,Mitochondrial Metabolism,Nrf2,NPC1L1,FOXO
In vitro	α-Lipoic Acid sodium (250, 500, and 1000 μM) significantly increased the NAD^+/NADH ratio in HepG2 cells; α-Lipoic Acid (50, 125, 250, and 500 μM) enhanced SIRT1 activity in HepG2 cells; α-Lipoic Acid (50, 125, 250, 500, and 100 μM) promoted the phosphorylation levels of AMPK and ACC in HepG2 cells in a dose-dependent manner [1].
In vivo	α-Lipoic Acid sodium (100 mg/kg or 200 mg/kg) significantly reduces visceral fat content in mice on a long-term high-fat diet, while also suppressing appetite and causing a notable decrease in body weight [1].

Solubility Information

Solubility	H2O: 28 mg/mL (122.64 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.380 mL	21.900 mL	43.8001 mL
5 mM	0.876 mL	4.380 mL	8.760 mL
10 mM	0.438 mL	2.190 mL	4.380 mL
50 mM	0.0876 mL	0.438 mL	0.876 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

Xiao L, et al. Activity of the dietary antioxidant ergothioneine in a virus gene-based assay for inhibitors of HIV transcription. Biofactors. 2006;27(1-4):157-65.
Lei D, et al. Synergistic neuroprotective effect of rasagiline and idebenone against retinal ischemia-reperfusion injury via the Lin28-let-7-Dicer pathway. Oncotarget. 2018 Jan 30;9(15):12137-12153.
Yang Y, et al. Alpha-lipoic acid improves high-fat diet-induced hepatic steatosis by modulating the transcription factors SREBP-1, FoxO1 and Nrf2 via the SIRT1/LKB1/AMPK pathway. J Nutr Biochem. 2014 Nov;25(11):1207-1217.
Pibiri M, et al. α-Lipoic acid induces Endoplasmic Reticulum stress-mediated apoptosis in hepatoma cells. Sci Rep. 2020 Apr 28;10(1):7139.