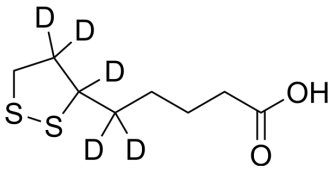
α-Lipoic Acid-d_5

Cat. No.:	HY-N0492S
CAS No.:	1189471-66-6
Molecular Formula:	$C_8H_9D_5O_2S_2$
Molecular Weight:	211.36
Target:	NF-κB; HIV; Mitochondrial Metabolism; Endogenous Metabolite; Apoptosis; Isotope-Labeled Compounds
Pathway:	NF-κB; Anti-infection; Metabolic Enzyme/Protease; Apoptosis; Others
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description	α-Lipoic Acid-d_5 is the deuterium labeled α-Lipoic Acid. α-Lipoic Acid is an antioxidant, which is an essential cofactor of mitochondrial enzyme complexes. α-Lipoic Acid inhibits NF-κB-dependent HIV-1 LTR activation[1][2][3]. α-Lipoic Acid induces endoplasmic reticulum (ER) stress-mediated apoptosis in hepatoma cells[4].
IC_{50} & Target	HIV-1
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019;53(2):211-216.

[2]. 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.;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.;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.;Pibiri M, et al. α-Lipoic acid induces Endoplasmic Reticulum stress-mediated apoptosis in hepatoma cells. Sci Rep. 2020 Apr 28;10(1):7139.

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