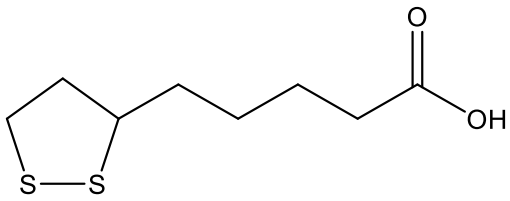
Catalog # 10-5094
Lipoic acid (D,L,alpha)
CAS# 1077-28-7
(±)-1,2-Dithiolane-3-pentanoic acid; Thioctic acid
Lot # X109127



alpha-Lipoic acid is an endogenous antioxidant.[1,2] Treatment with alpha-lipoic acid increased hepatic nuclear Nrf2 levels, induced Nrf2-mediated gene transcription, and reversed age-related decline in hepatic glutathione levels in a rat model.[3] It is an essential cofactor required for catalysis by multiple mitochondrial enzymes including pyruvate dehydrogenase, α-ketoglutarate dehydrogenase and branched-chain ketoacid dehydrogenase among others.[4] It has shown efficacy as a treatment in diabetic neuropathy.[5]

1) Packer *et al*. (1995), *alpha-Lipoic acid as a biological antioxidant*; Free Radic. Biol. Med., **19** 227
2) Shay *et al*. (2008), *α-lipoic acid a scavenger of reactive oxygen species in vivo? Evidence for its initiation of stress signaling pathways that promote endogenous antioxidant activity*; IUBMB Life, **60** 362
3) Suh *et al*. (2004), *Decline in transcriptional activity of Nrf2 causes age-related loss of glutathione synthesis, which is reversible with lipoic acid*; Proc. Natl. Acad. Sci. USA, **101** 3381
4) Solmonson and DeBerardinis (2018), *Lipoic acid metabolism and mitochondrial redox regulation*; J. Biol. Chem., **293** 7522
5) Papanas and Ziegler (2014), *Efficacy of α-lipoic acid in diabetic neuropathy*; Expert Opin. Pharmacother., **15** 2721

PHYSICAL DATA

Molecular Weight:	206.32
Molecular Formula:	$C_8H_{14}O_2S_2$
Purity:	>98% by TLC
	NMR: (Conforms)
Solubility:	DMSO (30 mg/ml)
Physical Description:	Pale yellow solid
Storage and Stability:	Store as supplied desiccated at -20°C for up to 2 years from the date of purchase.
	Solutions in DMSO may be stored under an inert atmosphere at -20°C for up to 1 month.

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