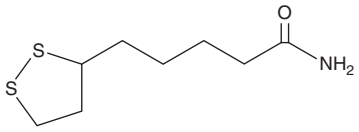
PRODUCT INFORMATION

Lipoamide

Item No. 35336

CAS Registry No.:	940-69-2
Formal Name:	1,2-dithiolane-3-pentanamide
Synonyms:	α-Lipoamide, DL-α-Lipoic Acid amide, NSC 90787, (±)-Thioctic Acid amide
MF:	$C_8H_{15}NOS_2$
FW:	205.3
Purity:	≥98%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Lipoamide is supplied as a solid. A stock solution may be made by dissolving the lipoamide in the solvent of choice, which should be purged with an inert gas. Lipoamide is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of lipoamide in these solvents is approximately 1, 2, and 5 mg/ml, respectively.

Description

Lipoamide is an amide derivative of lipoic acid (Item No. 10005728).[1] It is an essential cofactor for enzymes in the citric acid cycle and enzymes involved in the catabolism of glycine and branched-chain amino acids (BCAAs).[2] Lipoamide is covalently attached to lysine residues in proteins *via* lipoylation, a post-translational modification that provides flexibility to enzyme complexes. It reduces hydrogen peroxide- or 6-OHDA-induced cytotoxicity in PC12 cells when used at concentrations of 50 and 100 µM and increases the expression and protein levels of nuclear factor erythroid 2-related factor 2 (Nrf2) targets.[1] Lipoamide (100 mg/kg) also reverses mitochondrial dysfunction, increases the number of midbrain dopaminergic neurons, and improves fine motor activity in a rat model of Parkinson's disease induced by 6-OHDA.[3]

References

1. Hou, Y., Li, X., Peng, S., *et al.* Lipoamide ameliorates oxidative stress via induction of Nrf2/ARE signaling pathway in PC12 cells. *J. Agric. Food Chem.* **67(29)**, 8227-8234 (2019).
2. Rowland, E.A., Snowden, C.K., and Cristea, I.M. Protein lipoylation: An evolutionarily conserved metabolic regulator of health and disease. *Curr. Opin. Chem. Biol.* **42**, 76-85 (2018)
3. Zhou, B., Wen, M., Lin, X., *et al.* Alpha lipoamide ameliorates motor deficits and mitochondrial dynamics in the Parkinson's disease model induced by 6-hydroxydopamine. *Neurotox. Res.* **33(4)**, 759-767 (2018).

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