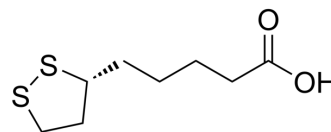


Lipoic acid

Cat. No.:	HY-18733
CAS No.:	1200-22-2
Molecular Formula:	C ₈ H ₁₄ O ₂ S ₂
Molecular Weight:	206.33
Target:	Mitochondrial Metabolism; Endogenous Metabolite; Reactive Oxygen Species
Pathway:	Metabolic Enzyme/Protease; Immunology/Inflammation; NF-κB
Storage:	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (484.66 mM)
 H₂O : < 0.1 mg/mL (insoluble)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		Mass		
	Concentration		1 mg	5 mg	10 mg
	1 mM		4.8466 mL	24.2330 mL	48.4660 mL
	5 mM		0.9693 mL	4.8466 mL	9.6932 mL
	10 mM		0.4847 mL	2.4233 mL	4.8466 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (12.12 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Lipoic acid ((R)-(+)-α-Lipoic acid) is an antioxidant, which is an essential cofactor of mitochondrial enzyme complexes. (R)-(+)-α-Lipoic acid is more effective than racemic Lipoic acid.

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro

Lipoic acid ((R)-(+)-α-Lipoic acid) is the form biosynthesized in humans which is essential for aerobic metabolism. Lipoic acid

((R)-(+)- α -Lipoic acid) is the nutritionally and therapeutically preferred form due to its "vitamin-like" role in metabolism. Lipoic acid ((R)-(+)- α -Lipoic acid) and S-(-)- α -Lipoic acid) constitute the racemic mixture Lipoic acid. Only the Lipoic acid ((R)-(+)- α -Lipoic acid) exists in nature and is an essential cofactor of four mitochondrial enzyme complexes. Lipoic acid ((R)-(+)- α -Lipoic acid) has been suggested to be nutritionally and therapeutically preferred form as antioxidant^[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell. 2023 Dec 7;186(25):5500-5516.e21.
- Adv Funct Mater. 2023 Jul 9.
- Am J Pathol. 2024 Feb;194(2):307-320.
- Pharmaceuticals. 2023, 16(1), 51.
- J Neurosci Res. 2019 Dec;97(12):1689-1705.

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REFERENCES

[1]. Nasole E, et al. Effects of alpha lipoic acid and its R+ enantiomer supplemented to hyperbaric oxygen therapy on interleukin-6, TNF- α and EGF production in chronic leg wound healing. J Enzyme Inhib Med Chem. 2014 Apr;29(2):297-302.

Caution: Product has not been fully validated for medical applications. For research use only.

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