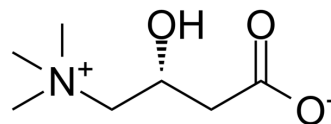


L-Carnitine

Cat. No.:	HY-B0399
CAS No.:	541-15-1
Molecular Formula:	C ₇ H ₁₅ NO ₃
Molecular Weight:	161.2
Target:	Endogenous Metabolite
Pathway:	Metabolic Enzyme/Protease
Storage:	4°C, stored under nitrogen
	* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

H₂O : ≥ 50 mg/mL (310.17 mM)
 * "≥" means soluble, but saturation unknown.

Solvent	Mass	Concentration		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	6.2035 mL	31.0174 mL	62.0347 mL
	5 mM	1.2407 mL	6.2035 mL	12.4069 mL
	10 mM	0.6203 mL	3.1017 mL	6.2035 mL

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

BIOLOGICAL ACTIVITY

Description

L-Carnitine (Levocarnitine) is an endogenous molecule involved in fatty acid metabolism, biosynthesized within the human body using amino acids: L-lysine and L-methionine, as substrates. L-Carnitine functions to transport long chain fatty acyl-CoAs into the mitochondria for degradation by β-oxidation. L-carnitine can ameliorate metabolic imbalances in many inborn errors of metabolism^{[1][2]}.

IC₅₀ & Target

Human Endogenous Metabolite

In Vitro

L-carnitine increases β oxidation and the resultant acetyl-coA joins the Krebs's cycle resulting in burning of fats and increases energy production, hence it increases the utilization of cellular fatty acids, and removal of abnormal fat on cellular membrane. It also acts as a fat burner by optimizing fat oxidation and consequently reducing its availability for storage^[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

L-carnitine reduces HFD induced lipid peroxidation and alteration of antioxidant biomarker in rats hepatic tissue^[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Metab. 2019 Jul 2;30(1):157-173.e7
- Biomed Pharmacother. 2020 Sep;129:110506.
- Nutr Metab. 2021 Jun 24;18(1):65.
- Environ Sci Pollut Res Int. 2018 Feb;25(4):3765-3774.
- Biosci Rep. 2021 May 10;BSR20204250.

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REFERENCES

- [1]. Ferreira GC, et al. L-Carnitine and Acetyl-L-carnitine Roles and Neuroprotection in Developing Brain. *Neurochem Res.* 2017;42(6):1661-1675.
- [2]. Miyagawa T, et al. Effects of oral L-carnitine administration in narcolepsy patients: a randomized, double-blind, cross-over and placebo-controlled trial. *PLoS One.* 2013;8(1):e53707.
- [3]. Abd Eldaim MA, et al. L-Carnitine-induced amelioration of HFD-induced hepatic dysfunction is accompanied by a reduction in hepatic TNF- α and TGF- β 1. *Biochem Cell Biol.* 2018;96(6):713-725.
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Caution: Product has not been fully validated for medical applications. For research use only.