

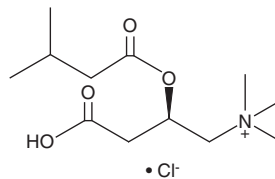
PRODUCT INFORMATION



Isovaleryl-L-carnitine (chloride)

Item No. 26555

CAS Registry No.: 139144-12-0
Formal Name: (2R)-3-carboxy-N,N,N-trimethyl-2-(3-methyl-1-oxobutoxy)-1-propanaminium, monochloride
Synonyms: CAR 5:0, C5:0 Carnitine, L-Carnitine isovaleryl ester, L-Isovalerylcarnitine
MF: C₁₂H₂₄NO₄ • Cl
FW: 281.8
Purity: ≥95%
Supplied as: A crystalline 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

Isovaleryl-L-carnitine (chloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the isovaleryl-L-carnitine (chloride) in the solvent of choice, which should be purged with an inert gas. Isovaleryl-L-carnitine (chloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of isovaleryl-L-carnitine (chloride) in these solvents is approximately 25, 20, and 15 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of isovaleryl-L-carnitine (chloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of isovaleryl-L-carnitine (chloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Isovaleryl-L-carnitine is a naturally occurring acylcarnitine that is formed *via* metabolic conversion of L-leucine.¹ It increases survival and decreases apoptosis in hepatocyte growth factor-deprived murine C2.8 hepatocytes when used at a concentration of 1 mM.² Isovaleryl-L-carnitine inhibits amino acid deprivation-induced proteolysis and autophagy in isolated perfused rat liver when used at concentrations of 77 and 100 μM, respectively.³ Increased levels of isovaleryl carnitine are associated with isovaleryl-CoA dehydrogenase deficiency (isovaleric acidemia).⁴

References

1. Cavazza, C. L-carnitine derivatives as therapeutic agents for treating myopathies and neuronal degeneration and for inhibiting proteolysis. *Sigma-Tau Industrie Farmaceutiche Riunite S.p.A.* **US5227518A** (1993).
2. Revoltella, R.P., Dal Canto, B., Caracciolo, L., *et al.* L-carnitine and some of its analogs delay the onset of apoptotic cell death initiated in murine C2.8 hepatocytic cells after hepatocyte growth factor deprivation. *Biochim. Biophys. Acta* **1224(3)**, 333-341 (1994).
3. Miotto, G., Venerando, R., Khurana, K.K., *et al.* Control of hepatic proteolysis by leucine and isovaleryl-L-carnitine through a common locus. Evidence for a possible mechanism of recognition at the plasma membrane. *J. Biol. Chem.* **267(31)**, 22066-22072 (1992).
4. Rinaldo, P., Cowan, T.M., and Matern, D. Acylcarnitine profile analysis. *Genet. Med.* **10(2)**, 151-156 (2008).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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