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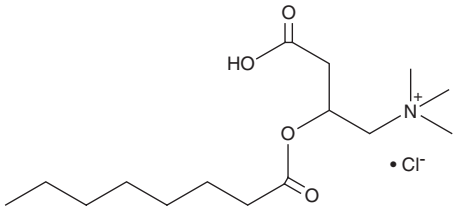
PRODUCT INFORMATION

Octanoyl-DL-carnitine (chloride)

Item No. 15048

CAS Registry No.: 14919-35-8
Formal Name: 3-carboxy-N,N,N-trimethyl-2-[(1-oxooctyl)oxy]-1-propanaminium, monochloride
Synonyms: C8 Carnitine, DL-Octanoylcarnitine, (±)-Octanoylcarnitine
MF: $C_{15}H_{30}NO_4 \bullet Cl$
FW: 323.9
Purity: ≥98%
Supplied as: A crystallline solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Octanoyl-DL-carnitine (chloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the octanoyl-DL-carnitine (chloride) in the solvent of choice. Octanoyl-DL-carnitine (chloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of octanoyl-DL-carnitine (chloride) in ethanol and DMF is approximately 20 mg/ml and approximately 10 mg/ml in DMSO.

Octanoyl-DL-carnitine (chloride) is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Octanoyl-DL-carnitine is a medium-chain acylcarnitine. It decreases the oxidation rate of the branched-chain 2-oxo acids 3-methyl-2-butanoate and 4-methyl-2-oxopentanoate in isolated rat muscle mitochondria in the presence of carnitine, but increases it in the absence of carnitine.[1] Octanoyl-DL-carnitine, with malate, has been used as a mitochondrial respiration substrate to measure the effect of creatine on the respiration rate of isolated rat cardiac fibers exposed to increasing concentrations of ADP.[2]

References

1. Veerkamp, J.H., van Moerkerk, H.T.B., and Wagenmakers, A. J.M. Interaction of short-chain and branched-chain fatty acids and their carnitine and CoA esters and of various metabolites and agents with branced-chain 2-oxo acid oxidation in rat muscle and liver mitochondria. *Int. J. Biochem.* **17(9)**, 967-974 (1985).
2. Toleikis, A., Trumbeckaite, S., Liobikas, J., *et al.* Fatty acid oxidation and mitochondrial morphology changes as key modulators of the affinity for ADP in rat heart mitochondria. *Cells* **9(2)**, 340 (2020).

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