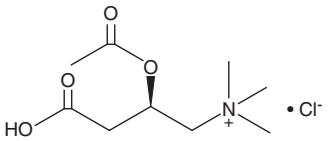
PRODUCT INFORMATION

Acetyl-L-carnitine (chloride)

Item No. 16948

CAS Registry No.: 5080-50-2
Formal Name: 2R-(acetyloxy)-3-carboxy-N,N,N-trimethyl-1-propanaminium, monochloride
Synonyms: ALCAR, L-Acetylcarnitine, C2:0 Carnitine, CAR 2:0, L-Carnitine acetyl ester
MF: $C_9H_{18}NO_4 \bullet Cl$
FW: 239.7
Purity: ≥98%
UV/Vis.: λ_{max}: 209 nm
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

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

Description

Acetyl-L-carnitine is an acetylated form of the essential mitochondrial metabolite L-carnitine (Item No. 21489) that is catabolized by plasma esterases into carnitine.[1-3] Acetyl-L-carnitine facilitates the uptake of acetyl-CoA into mitochondria during fatty acid oxidation, enhances acetylcholine production, and stimulates protein and membrane phospholipid synthesis. *In vivo*, acetyl-L-carnitine (100 mg/kg) increases mGlu2/3 receptor protein levels and mechanical pain thresholds in a mouse model of chronic inflammatory pain induced by complete Freund's adjuvant.[4]

References

1. Vaz, F.M. and Wanders, R.J.A. Carnitine biosynthesis in mammals. *Biochem. J.* **361(Pt 3)**, 417-429 (2002).
2. Fu, L., Huang, M., and Chen, S. Primary carnitine deficiency and cardiomyopathy. *Korean. Circ. J.* **43(12)**, 785-792 (2013).
3. Stieger, B., O'Neill, B., and Krähenbühl, S. Characterization of L-carnitine transport by rat kidney brush-border-membrane vesicles. *Biochem. J.* **309(Pt 2)**, 643-647 (1995).
4. Notartomaso, S., Mascio, G., Bernabucci, M., *et al.* Analgesia induced by the epigenetic drug, L-acetylcarnitine, outlasts the end of treatment in mouse models of chronic inflammatory and neuropathic pain. *Mol. Pain* **13**, 1744806917697009 (2017).

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