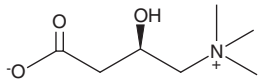
PRODUCT INFORMATION

L-Carnitine

Item No. 21489

CAS Registry No.: 541-15-1
Formal Name: 3-carboxy-2R-hydroxy-N,N,N-trimethyl-1-propanaminium, inner salt
Synonyms: (–)-Carnitine, Levocarnitine, R-Carnitine
MF: $C_7H_{15}NO_3$
FW: 161.2
Purity: ≥95%
Supplied as: A crystalline solid
Storage: Room temperature
Stability: ≥4 years



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

Laboratory Procedures

L-Carnitine is supplied as a crystalline solid. A stock solution may be made by dissolving the L-carnitine in the solvent of choice, which should be purged with an inert gas. L-Carnitine is soluble in the organic solvent ethanol at a concentration of approximately 10 mg/ml.

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 L-carnitine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of L-carnitine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

L-Carnitine is a conditionally essential nutrient.[1] It is obtained from dietary sources or through the metabolism of lysine and methionine.[2,3] L-Carnitine facilitates the transport of long-chain fatty acids into the mitochondrial matrix for β-oxidation, has other diverse roles on metabolism, and is involved in the maintenance of coenzyme A (CoA; Item No. 16147) stores. Plasma and/or tissue levels of L-carnitine are decreased in primary L-carnitine deficiency, a disorder characterized by impaired fatty acid oxidation, with symptoms varying depending on whether it is systemic or muscle-specific.[1] Serum and tissue levels of L-carnitine are also reduced in secondary L-carnitine deficiencies caused by a variety of hereditary defects or acquired disorders.

References

1. Seim, H., Eichler, K., and Kleber, H.-P. L(–)-Carnitine and its precursor, γ-butyrobetaine. Nutraceuticals in Health and Disease Prevention. Krämer, K., Hoppe, P.-P., Packer, L., editors, 1st edition, *Marcel Dekker, Inc.* (2001).
2. Vaz, F.M. and Wanders, R.J.A. Carnitine biosynthesis in mammals. *Biochem. J.* **361(Pt 3)**, 417-429 (2002).
3. Fu, L., Huang, M., and Chen, S. Primary carnitine deficiency and cardiomyopathy. *Korean. Circ. J.* **43(12)**, 785-792 (2013).

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