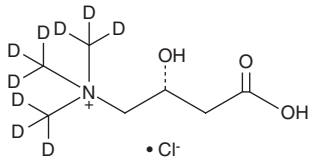
PRODUCT INFORMATION

L-Carnitine-d_9 (chloride)

Item No. 37029

CAS Registry No.: 2687961-04-0
Formal Name: 3-carboxy-2-hydroxy-N,N,N-tri(methyl-d_3)-1-propanaminium, monochloride
Synonyms: (–)-Carnitine-d_9, Levocarnitine-d_9, R-Carnitine-d_9
MF: $C_7H_7D_9NO_3 \bullet Cl$
FW: 206.7
Chemical Purity: ≥98% (L-carnitine)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_9); ≤1% d_0
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

L-Carnitine-d_9 (chloride) is intended for use as an internal standard for the quantification of L-carnitine (Item No. 21489) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

L-Carnitine-d_9 (chloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the L-carnitine-d_9 (chloride) in the solvent of choice, which should be purged with an inert gas. L-Carnitine-d_9 (chloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of L-carnitine-d_9 (chloride) in these solvents is approximately 25, 20, and 15 mg/ml, respectively.

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* 217-256 (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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