

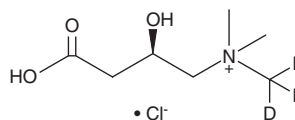
# PRODUCT INFORMATION



## L-Carnitine-d<sub>3</sub> (chloride)

Item No. 26565

**CAS Registry No.:** 350818-62-1  
**Formal Name:** 3-carboxy-2R-hydroxy-N,N-dimethyl-N-(methyl-d<sub>3</sub>)-1-propanaminium, monochloride  
**Synonyms:** (-)-Carnitine-d<sub>3</sub>, R-Carnitine-d<sub>3</sub>, Levocarnitine-d<sub>3</sub>  
**MF:** C<sub>7</sub>H<sub>13</sub>D<sub>3</sub>NO<sub>3</sub> • Cl  
**FW:** 200.7  
**Chemical Purity:** ≥95% (L-Carnitine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**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<sub>3</sub> (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<sub>3</sub> (chloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the L-carnitine-d<sub>3</sub> (chloride) in the solvent of choice, which should be purged with an inert gas. L-Carnitine-d<sub>3</sub> (chloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of L-carnitine-d<sub>3</sub> (chloride) in these solvents is approximately 25, 20, and 15 mg/ml, respectively.

### Description

L-Carnitine is a conditionally essential nutrient.<sup>1</sup> It is obtained from dietary sources or through the metabolism of lysine and methionine.<sup>2,3</sup> 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.<sup>1</sup> 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., and Packer, L., editors, 1<sup>st</sup> 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).

#### 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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM