

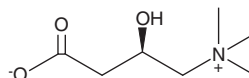
# PRODUCT INFORMATION



## L-Carnitine

Item No. 21489

<b>CAS Registry No.:</b>	541-15-1
<b>Formal Name:</b>	3-carboxy-2R-hydroxy-N,N,N-trimethyl-1-propanaminium, inner salt
<b>Synonyms:</b>	(-)-Carnitine, Levocarnitine, R-Carnitine
<b>MF:</b>	C <sub>7</sub> H <sub>15</sub> NO <sub>3</sub>
<b>FW:</b>	161.2
<b>Purity:</b>	≥95%
<b>Supplied as:</b>	A crystalline solid
<b>Storage:</b>	Room temperature
<b>Stability:</b>	≥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.<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  $\beta$ -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,  $\gamma$ -butyrobetaine. *Nutraceuticals in Health and Disease Prevention*. Krämer, K., Hoppe, P.-P., 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