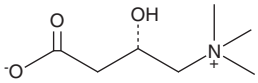
PRODUCT INFORMATION

D-Carnitine

Item No. 16749

CAS Registry No.:	541-14-0
Formal Name:	3-carboxy-2S-hydroxy-N,N,N-trimethyl-1-propanaminium, inner salt
Synonyms:	(+)-Carnitine, S-Carnitine
MF:	$C_7H_{15}NO_3$
FW:	161.2
Purity:	≥98%
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

D-Carnitine is supplied as a crystalline solid. A stock solution may be made by dissolving the D-carnitine in the solvent of choice, which should be purged with an inert gas. D-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 D-carnitine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-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

D-Carnitine is an isomer of the conditionally essential nutrient L-carnitine (Item No. 21489), which facilitates long-chain fatty acid transport into the mitochondrial matrix for β-oxidation.[1] It inhibits the uptake of L-carnitine by rat kidney brush border membrane vesicles when used at a concentration of 50 µM and by primary human limbal corneal (HCLE) and conjunctival epithelial (HCjE) cells when used at 0.5 and 1 mM.[2,3]

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, 1st edition, *Marcel Dekker, Inc.* (2001).
2. 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).
3. Xu, S., Flanagan, J.L., Simmons, P.A., *et al.* Transport of L-carnitine in human corneal and conjunctival epithelial cells. *Mol. Vis.* **16**, 1823-1831 (2010).

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