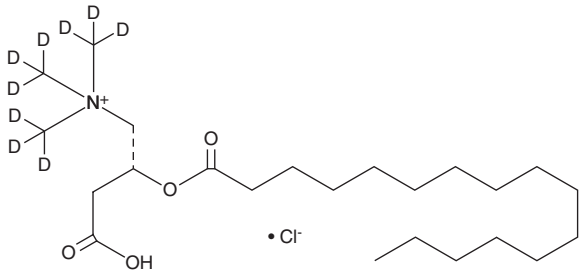
PRODUCT INFORMATION

Palmitoyl-L-carnitine-d_9

Item No. 40353

Formal Name:	2R-3-carboxy-N,N,N-tri(methyl-d_3)-2-[(1-oxohexadecyl)oxy]-1-propanaminium, inner salt, monochloride
Synonyms:	CAR 16:0-d_9, C16:0 Carnitine-d_9, L-Carnitine hexadecanoyl ester-d_9, L-Carnitine palmitoyl ester-d_9, Hexadecanoyl-L-carnitine-d_9, L-Hexadecanoylcarnitine-d_9, L-Palmitoylcarnitine-d_9
MF:	$C_{23}H_{37}D_9NO_4 \bullet Cl$
FW:	445.1
Chemical Purity:	≥98% (Palmitoyl-L-carnitine)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_9); ≤1% d_0
Supplied as:	A 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

Palmitoyl-L-carnitine-d_9 (chloride) is intended for use as an internal standard for the quantification of palmitoyl-L-carnitine 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).

Palmitoyl-L-carnitine-d_9 (chloride) is supplied as a solid. A stock solution may be made by dissolving the palmitoyl-L-carnitine-d_9 (chloride) in the solvent of choice, which should be purged with an inert gas. Palmitoyl-L-carnitine-d_9 (chloride) is slightly soluble (0.1-1 mg/ml) in acetonitrile.

Description

Palmitoyl-L-carnitine is a long-chain acylcarnitine and an isomer of palmitoyl-DL-carnitine (Item No. 11095) and palmitoyl-D-carnitine (Item No. 26552).[1] Palmitoyl-L-carnitine is transported into mitochondria *via* carnitine palmitoyl transferase II to deliver palmitate for fatty acid oxidation and energy production.[2] It inhibits lecithin:cholesterol acyltransferase activity in isolated rat, but not human, plasma when used at a concentration of 500 µM.[3] Serum and hepatic levels of palmitoyl-L-carnitine are increased in mice during cold exposure, and it is taken up by brown adipose tissue.[4] Palmitoyl-L-carnitine also protects against age-induced cold sensitivity in mice.

References

1. Bezaire, V., Bruce, C.R., Heigenhauser, G.J.F., *et al. Am. J. Physiol. Endocrinol. Metab.* **290(3)**, E509-E515 (2006).
2. El-Hayek, R., Valdivia, C., Valdivia, H.H., *et al. Biophys. J.* **65(2)**, 779-789 (1993).
3. Bell, F.P. *Int. J. Biochem.* **15(2)**, 133-136 (1983).
4. Simcox, J., Geoghegan, G., Maschek, J.A., *et al. Cell Metab.* **26(3)**, 509-522 (2017).

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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