



Palmitoyl-L-carnitine-d₃ (chloride)

Cat. No.:	OB0626WX-1669
Appearance:	Solid
Purity:	≥99% (deuterated forms, d1-d3)
Identity:	Confirmed by NMR and TLC.
Size:	1 mg; 5 mg; 10 mg; 20 mg

This product is for research use only and is not intended for diagnostic use.

Product Overview

Description	Palmitoyl-L-carnitine-d ₃ is a stable isotope-labeled internal standard intended for the mass spectrometric quantification of palmitoyl-L-carnitine. The unlabelled compound is a major endogenous long-chain acylcarnitine that facilitates the transport of long-chain fatty acids into the mitochondria via carnitine palmitoyl transferase II for beta-oxidation. It regulates plasma acyltransferase activity, plays a physiological role in thermogenesis and brown adipose tissue uptake during thermal stress, and helps mitigate age-related cold sensitivity.
Labeling	Stable isotope-labeled
Synonyms	3-carboxy-N,N-dimethyl-N-(methyl-d ₃)-2R-[(1-oxohexadecyl)oxy]-1-propanaminium, monochloride; CAR 16:0-d ₃ ; C16:0 Carnitine-d ₃ ; L-Carnitine hexadecanoyl ester-d ₃ ; L-Carnitine palmitoyl ester-d ₃ ; Hexadecanoyl-L-carnitine-d ₃ ; L-Hexadecanoylcarnitine-d ₃ ; L-Palmitoylcarnitine-d ₃ ; 1334532-26-1; Palmitoyl-L-carnitine-d ₃ Hydrochloride; Palmitoyl-L-carnitine-d ₃ Hydrochloride; L-Palmitoylcarnitine-d ₃ (hydrochloride); Hexadecanoyl-L-carnitine-d ₃ HCl (N-methyl-d ₃); [(2R)-3-carboxy-2-hexadecanoyloxypropyl]-dimethyl-(trideuteriomethyl)azanium; chloride; L-Palmitoylcarnitine -d ₃ Chloride; Palmitoyl-L-carnitine-d ₃ chloride
CAS No.	1334532-26-1
Compound CID	131872269
Formula	C ₂₃ H ₄₃ D ₃ NO ₄ • Cl
Formula Weight	439.1

Specification



Solubility in DMSO	10 mg/mL
Solubility in Ethanol	20 mg/mL
Solubility in DMF	20 mg/mL
IUPAC Name	[(2 <i>R</i>)-3-carboxy-2-hexadecanoyloxypropyl]-dimethyl-(trideuteriomethyl)azanium chloride
InChI	InChI=1S/C23H45NO4.ClH/c1-5-6-7-8-9-10-11-12-13-14-15-16-17-18-23(27)28-21(19-22(25)26)20-24(2,3)4;/h21H,5-20H2,1-4H3;1H/t21-;/m1./s1/i2D3;
InChI Key	GAMKNLFIHBMGQT-HZBHYVOGSA-N
Canonical SMILES	<chem>OC(C[C@H](C[N+](C([2H])([2H])([2H]))(C)C)OC(CCCCCCCCCCCCCC)=O)=O.[Cl-]</chem>
Stability	1 year
Storage	Storage at -20°C.
Applications	Palmitoyl-L-carnitine-d ₃ (chloride) acts as a stable isotope-labeled long-chain saturated acylcarnitine internal tracking control for mass spectrometry workflows, providing an isolated heavy-mass tag to secure quantitative calibration accuracy and map fatty acid transport variations during metabolic disorders research.