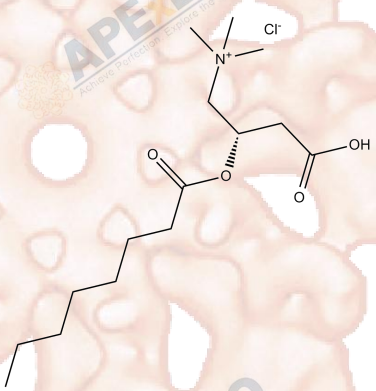
Product Data Sheet

(±)-Octanoylcarnitine chloride

Cat. No.: B6371
CAS No.: 14919-35-8
Formula: C15H30ClNO4
M.Wt: 323.86
Synonyms: Octanoylcarnitine chloride, octanoyl-DL-carnitine
Target: Mitochondrial membrane
Pathway: Membrane Transporter/Ion Channel
Storage: Store at -20° C



Solvent & Solubility

In Vitro

≥36.9 mg/mL in DMSO; ≥18.6 mg/mL in EtOH; ≥37.4 mg/mL in H2O

Preparing Stock Solutions

Mass / Solvent / Concentration	1mg	5mg	10mg
1 mM	3.0878 mL	15.4388 mL	30.8775 mL
5 mM	0.6176 mL	3.0878 mL	6.1755 mL
10 mM	0.3088 mL	1.5439 mL	3.0878 mL

Please refer to the solubility information to select the appropriate solvent.

Biological Activity

Shortsummary

(±)-Octanoylcarnitine chloride (CAS 14919-35-8) is an acyl derivative structurally related to acetylcarnitine chloride; it functions as an intermediate in fatty acid metabolism by facilitating fatty acid transport across mitochondrial membranes for subsequent β-oxidation and ATP synthesis. Experimental evidence indicates that (±)-octanoylcarnitine modulates mitochondrial utilization of certain branched-chain 2-oxo acids, influencing their oxidation rates in isolated mitochondria. Additionally, researchers employ (±)-octanoylcarnitine combined with malate to investigate mitochondrial respiratory activity, examining oxidative phosphorylation dynamics in response to metabolic modulators, such as ADP and creatine, particularly in isolated cardiac muscle tissues.

IC_{50} & Target		
In Vitro	**Cell Viability Assay**	
	Cell Line:	Satellite cells
	Preparation method:	Medium was removed, cells were washed with PBS and put on ice. 1 ml of Mir05 (0.5 mM EGTA, 3 mM MgCl2, 60 mM Lactobionic acid, 20 mM Taurine, 10 mM KH2PO4, 20 mM HEPES, 110 mM D-Sucrose, 1 g/l essentially fatty acid free BSA, pH7.1) buffer was added and cells were collected by scraping. For respirometry, 800,000 cells were pelleted (10,000 g, 5 min, 4 ° C), buffer was removed and the cell pellet was resolved in 200 µl of Mir05 using a 500 µl Hamilton syringe. Cell solution corresponding to 200 µg protein by BCA was pelleted (10,000 g, 5 min, 4 ° C), buffer was removed and the cell pellet was resolved in 200 µl of Mir05 using a 500 µl Hamilton syringe. For measurement, the resuspended samples were injected into the measurement chamber of an Oxygraph-2k (Oroboros Instruments, Innsbruck, Austria). The chamber was pre-equilibrated with 2 ml Mir05. After briefly waiting for a plateau in respiration to form, 3 µl digitonin (8,1 mM, in DMSO) and 3,2 µl malate (800 mM, in H2O) were injected. After forming of a plateau, the following injections were 10 µl ADP (500 mM, H20), 10 µl octanoylcarnitine (100 mM, H20), 10 µl pyruvate (1 M, H20), 10 µl succinate (500 mM, H20), 5 µl cytochrome C (from equine heart, 4 mM, H20), FCCP titration (1 µl steps, 1 mM, DMSO), 1 µl rotenone (1 mM, ethanol), 1 µl antimycin A (5 mM, ethanol), always waiting for a plateau to form after each injection.
	Reacting conditions:	800,000 cells,10 µl octanoylcarnitine (100 mM)
In Vivo	**Animal experiment**	
	Applications:	

Product Citations

See more customer validations on www.apexbt.com.

References

1. Hoffmann C, Höckele S, Kappler L, Hrabě de Angelis M, Häring HU, Weigert C. The effect of differentiation and TGF β on mitochondrial respiration and mitochondrial enzyme abundance in cultured primary human skeletal muscle cells. Sci Rep. 2018 Jan 15;8(1):737. doi: 10.1038/s41598-017-18658-3. PMID: 29335583; PMCID: PMC5768688.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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