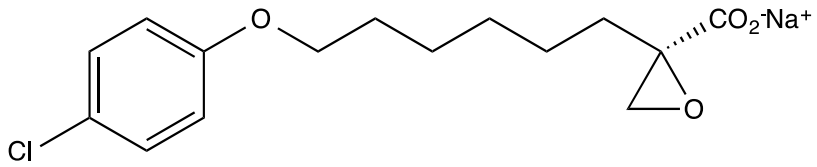
Catalog # 10-4731

(R)-(+)-Etomoxir Na

CAS# 828934-41-4

(*R*)-(+)-2-[6-(4-Chlorophenoxy)hexyl]-oxirane-2-carboxylic acid sodium salt

Lot # FBS4019



Etomoxir is an irreversible inhibitor of mitochondrial carnitine palmitoyl transferase 1 (CPT1).[1] It is widely used to study fatty acid oxidation. Etomoxir has been investigated as a therapeutic agent for heart disease[2], diabetes[3], and cancer[4,5]. Use of etomoxir in concentrations greater than 5 µM induces acute production of ROS with associated evidence of severe oxidative stress in proliferating T cells indicating a loss of specificity for CTP1 at these concentrations.[6] 200 µM etomoxir inhibited complex I of the electron transport chain.[7]

1) Agius *et al.* (1991), *Stereospecificity of the inhibition of etomoxir of fatty acid and cholesterol synthesis in isolated rat hepatocytes*; Biochem.Pharmacol. **42** 1717
2) Lionetti *et al.* (2011), *Modulating fatty acid oxidation in heart failure*; Cardiovasc. Res, **90** 202
3) Huebinger *et al.* (1997), *Effects of the carnitine-acyltransferase inhibitor etomoxir on insulin sensitivity, energy expenditure, and substrate oxidation in NIDDM*; Horm.Metab.Res. **29** 436
4) Pike *et al.* (2011), *Inhibition of fatty acid oxidation by etomoxir impairs NADPH production and increases reactive oxygen species resulting in ATP depletion and cell death in human glioblastoma cells*; Biochim.Biophys. Acta **1807** 726
5) Samudio *et al.* (2010), *Pharmacologic inhibition of fatty acid oxidation sensitizes human leukemia cells to apoptosis induction*; J.Clin.Invest. **120** 142
6) O'Connor *et al.* (2018), *The CPT1a inhibitor, etomoxir, induces severe oxidative stress at commonly used concentrations;* Sci.Rep. **8** 6289
7) Yao *et al.* (2018), *Identifying off-target effects of etomoxir reveals that carnitine palmitoyltransferase I is essential for cancer cell proliferation independent of β-oxidation*; PLoS Biol. **16** e2003782

PHYSICAL DATA

Molecular Weight:	320.74
Molecular Formula:	$C_{15}H_{18}ClO_4 \cdot Na$
Purity:	>98% by HPLC NMR: (Conforms)
Solubility:	DMSO (5 mg/mL with warming)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 1 year from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 1 month.

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