NEUROMICS

Etomoxir (+) Na Data Sheet

Catalog Number:	MC11085	**Product Type:**	Small Molecule
Bio-Activity:	Carnitine palmitoyltransferase inhibitor	**CAS #:**	828934-41-4
Research Categories:	Oxidative stress, immunology, diabetes, cancer, heart disease	**Chemical Name:**	(R)-(+)-2-[6-(4-Chlorophenoxy)hexyl]-oxirane-2-carboxylic acid sodium salt
Solubility:	Soluble in DMSO (up to 5 mg/ml with warming)	**Molecular Formula:**	C15H18ClO4·Na
Purity:	> 98%	**Molecular Weight:**	320.74
Format:	Powder	**Ship Temp:**	Ambient
Storage:	-20°C		

Application Notes

Description/Data:
Etomoxir (828934-41-4) 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].

References:

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

FOR RESEARCH USE ONLY

Neuromics Antibodies • 5325 West 74th Street, Suite 8 • Edina, MN 55439
phone 866-350-1500 • fax 612-677-3976 • e-mail: pshuster@neuromics.com

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

FOR RESEARCH USE ONLY

Neuromics Antibodies • 5325 West 74th Street, Suite 8 • Edina, MN 55439
phone 866-350-1500 • fax 612-677-3976 • e-mail: pshuster@neuromics.com