



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 μ M induces acute production of ROS with associated evidence of severe oxidative stress in proliferating T cells indicating a loss of specificity for CPT1 at these concentrations [6]. 200 μ M 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

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- 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

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