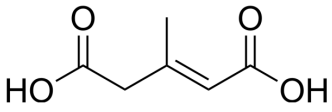
3-Methylglutaconic acid

Cat. No.:	HY-139427
CAS No.:	5746-90-7
Molecular Formula:	$C_6H_8O_4$
Molecular Weight:	144.13
Target:	GABA Receptor
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vivo	1. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.08 mg/mL (14.43 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	3-Methylglutaconic acid is the major metabolites accumulating in 3-Methylglutaconic aciduria (MGTA). 3-Methylglutaconic acid can induce lipid oxidative damage and protein oxidative. 3-Methylglutaconic acid decreases the non-enzymatic antioxidant defenses in cerebral cortex supernatants to elicit oxidative stress in the cerebral cortex. 3-Methylglutaconic acid can be used for brain damage disease research[1].
In Vitro	3-Methylglutaconic acid (0.1-5.0 mM, 1 h) induces lipid oxidative damage and antioxidants (TRO, MEL and SOD plus CAT) prevent the lipid peroxidation at higher doses of 5 mM in rat cerebral cortex supernatants[1]. 3-Methylglutaconic acid (0.1-5.0 mM, 1 h) induces protein oxidative damage and diminishes non-enzymatic antioxidant defenses in rat cerebral cortex supernatants[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Guilhian Leipnitz, et al. Induction of oxidative stress by the metabolites accumulating in 3-methylglutaconic aciduria in cerebral cortex of young rats. Life Sci. 2008 Mar 12;82(11-12):652-62.

[2]. N L Alsip, et al. Cardiovascular effects of 3-mercaptopropionic acid and levels of GABA in regions of the brain of guinea-pigs. Neuropharmacology. 1984 Mar;23(3):349-57.

[3]. E Girardi, et al. 3-mercaptopropionic acid-induced seizures decrease NR2B expression in Purkinje cells: cyclopentyladenosine effect. Cell Mol Neurobiol. 2010 Oct;30(7):985-90.

[4]. Leipnitz G, et al. Induction of oxidative stress by the metabolites accumulating in 3-methylglutaconic aciduria in cerebral cortex of young rats. Life Sci. 2008 Mar 12;82(11-12):652-62.

Caution: Product has not been fully validated for medical applications. For research use only.

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