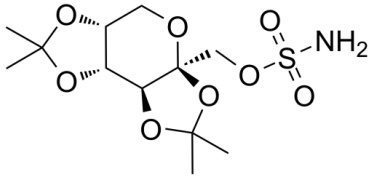
Data Sheet

Product Name:	Topiramate
Cat. No.:	CS-1885
CAS No.:	97240-79-4
Molecular Formula:	C12H21NO8S
Molecular Weight:	339.36
Target:	Calcium Channel; Carbonic Anhydrase; GABA Receptor; iGluR; Potassium Channel; Sodium Channel
Pathway:	Membrane Transporter/Ion Channel; Metabolic Enzyme/Protease; Neuronal Signaling
Solubility:	H2O : 4 mg/mL (11.79 mM; Need ultrasonic); DMSO : ≥ 100 mg/mL (294.67 mM)



BIOLOGICAL ACTIVITY:

Topiramate (McN 4853) is a broad-spectrum antiepileptic agent. Topiramate is a **GluR5 receptor** antagonist. Topiramate produces its antiepileptic effects through enhancement of **GABAergic** activity, inhibition of **kainate/AMPA** receptors, inhibition of voltage-sensitive **sodium and calcium channels**, increases in **potassium** conductance, and inhibition of **carbonic anhydrase**[1][2][3]. IC50 & Target: GluR5 receptor[1]; GABAergic[2]; Kainate/AMPA[2]; Sodium channel[2]; Calcium channel[2]; Potassium channel[2]; Carbonic anhydrase[2]
In Vitro: Topiramate has been believed to be a type of antiepileptic drug that blocks spread of seizures. Thus far, the mechanisms of its actions have been proven to include use-dependent inhibition of voltage-dependent Na+ channels in neurons, potentiation of GABA (γ-amino-butyric acid)-induced Cl- influx, and inhibitory effects on inward currents by antagonizing kainate/alpha-amino-3-hydroxy-5-methylisoxazole-4-propionic acid (AMPA) receptors[2].

References:

[1]. Lyseng-Williamson KA, et al. Topiramate: a review of its use in the treatment of epilepsy. Drugs. 2007;67(15):2231-56.

[2]. Nakamura J, et al. Target pharmacology of topiramate, a new antiepileptic drug. Nihon Yakurigaku Zasshi. 2000 Jan;115(1):53-7.

[3]. Kaminski RM, et al. Topiramate selectively protects against seizures induced by ATPA, a GluR5 kainate receptor agonist. Neuropharmacology. 2004 Jun;46(8):1097-104.

CAIndexNames:

β-D-Fructopyranose, 2,3:4,5-bis-O-(1-methylethylidene)-, 1-sulfamate

SMILES:

NS(OC[C@]1(OC(C)(C)O2)[C@@H]2[C@H](OC(C)(C)O3)[C@H]3CO1)(=O)=O

Tel: 732-484-9848 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA