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Lieferung & Zahlungsart

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Zuschläge

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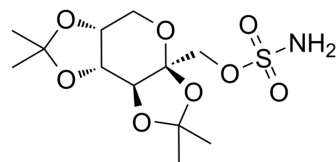
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Topiramate

Cat. No.:	HY-B0122
CAS No.:	97240-79-4
Molecular Formula:	C ₁₂ H ₂₁ NO ₈ S
Molecular Weight:	339.36
Target:	iGluR; GABA Receptor; Sodium Channel; Calcium Channel; Potassium Channel; Carbonic Anhydrase
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (294.67 mM)
 H₂O : 4 mg/mL (11.79 mM; Need ultrasonic)
 * "≥" means soluble, but saturation unknown.

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		2.9467 mL	14.7336 mL	29.4672 mL
	5 mM		0.5893 mL	2.9467 mL	5.8934 mL
	10 mM		0.2947 mL	1.4734 mL	2.9467 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- Add each solvent one by one: PBS
Solubility: 16.67 mg/mL (49.12 mM); Clear solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.5 mg/mL (7.37 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Acta Pharmacol Sin. 2022 Jul 27.
- Anal Chem. 2020 Dec 15;92(24):15745-15756.
- ETH Zurich. 2020 Dec.
- Personalized Medicine Universe. 2019 May.

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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.

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

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