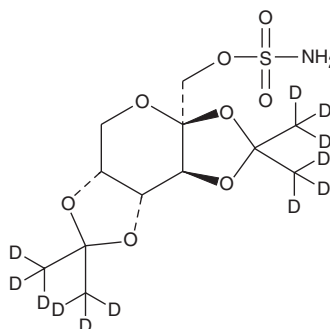


PRODUCT INFORMATION



Topiramate-d₁₂ Item No. 26443

CAS Registry No.: 1279037-95-4
Formal Name: 2,3:4,5-bis-O-[1-(methyl-d₃)ethylidene-2,2,2-d₃]-β-D-fructopyranose, 1-sulfamate
Synonym: TPM-d₁₂
MF: C₁₂H₉D₁₂NO₈S
FW: 351.4
Chemical Purity: ≥98% (Topiramate)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₁₂); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Topiramate-d₁₂ is intended for use as an internal standard for the quantification of topiramate (Item No. 13623) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Topiramate-d₁₂ is supplied as a solid. A stock solution may be made by dissolving the topiramate-d₁₂ in the solvent of choice, which should be purged with an inert gas. Topiramate-d₁₂ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of topiramate-d₁₂ in these solvents is approximately 20, 15, and 25 mg/ml, respectively.

Description

Topiramate is a sugar sulfamate with anticonvulsant activity.¹ It inhibits carbonic anhydrase in intact human erythrocytes (K_i = ~200 μM), as well as blocks sodium and calcium channels and kainate-induced currents *in vitro*.¹⁻³ It also increases GABA_A receptor-mediated chloride ion flux.³ Topiramate inhibits hind-limb tonic-extensor seizures in the maximal electroshock seizure test in mice (ED₅₀ = 39 mg/kg, p.o.).¹ Formulations containing topiramate have been used in the treatment of epilepsy and prophylaxis of migraine headaches.

References

1. Maryanoff, B.E., Nortey, S.O., Gardocki, J.F., *et al.* Anticonvulsant O-alkyl sulfamates. 2,3:4,5-Bis-O-(1-methylethylidene)-β-D-fructopyranose sulfamate and related compounds. *J. Med. Chem.* **30**(5), 880-887 (1987).
2. Greenfield, L.J., Jr. Molecular mechanisms of antiseizure drug activity at GABA_A receptors. *Seizure* **22**(8), 589-600 (2013).
3. Rosenfeld, W.E. Topiramate: A review of preclinical, pharmacokinetic, and clinical data. *Clin. Ther.* **19**(6), 1294-1308 (1997).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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