**Topiramate**  
*Item No. 13623*

**CAS Registry No.:** 97240-79-4  
**Formal Name:** 2,3,4,5-bis-O-(1-methyl ethylidene)-β-D-fructopyranose 1-sulfamate  
**Synonyms:** Epitomax, McN 4853, RWJ 17021, TPM, Topamax®  
**MF:** C_{12}H_{21}NO_{8}S  
**FW:** 339.4  
**Purity:** ≥98%  
**Stability:** ≥2 years at -20°C  
**Supplied as:** A crystalline solid

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**Laboratory Procedures**

For long term storage, we suggest that topiramate be stored as supplied at -20°C. It should be stable for at least two years.

Topiramate is supplied as a crystalline solid. A stock solution may be made by dissolving the topiramate in the solvent of choice. Topiramate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of topiramate in these solvents is approximately 20, 15, and 25 mg/ml, respectively. Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of topiramate can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of topiramate in PBS, pH 7.2, is approximately 0.15 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Topiramate is a sugar sulfamate that exhibits potent anticonvulsant activity. It completely blocks seizures (ED_{50} = 39 mg/kg when given orally) in mice in the maximal electroshock seizure test. This effect is sustained for over eight hours. In the rotoreel test of neurotoxicity, topiramate has a peak neurotoxic dose ED_{50} value of 407 mg/kg in mice at one hour. It is virtually inactive against seizures caused by pentylenetetrazol, bicuculline, picrotoxin, and strychnine. It does not bind to norepinephrine, serotonin, γ-amino butyric acid, muscarinic, or dopamine receptors. The drug form of Topiramate, Topamax®, is used alone or with other medications, to treat seizures associated with epilepsy and to prevent migraine headaches.3,4

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**References**


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**Related Products**

- Synapsin I Polyclonal Antibody - Item No. 10606
- NMDA Receptor NR1 Subunit Monoclonal Antibody - Item No. 10607
- NMDA Receptor NR2A Subunit Monoclonal Antibody - Item No. 10608
- NMDA Receptor NR2B Subunit Monoclonal Antibody - Item No. 10609
- Asparagine - Item No. 13644
- NMDA Receptor NR2B Subunit (Phospho-Tyr1252) Polyclonal Antibody - Item No. 10000759
- NMDA Receptor NR2B Subunit (Phospho-Tyr1336) Polyclonal Antibody - Item No. 10009760
- NMDA Receptor NR2B Subunit (Phospho-Tyr1472) Polyclonal Antibody - Item No. 10009761
- 7-Aminoclonazepam-d4 - Item No. 10010670
- 7-Aminoclonazepam - Item No. 10010780
- NMDA Receptor NR2A Subunit Polyclonal Antibody - Item No. 10000970
- NMDA Receptor NR2B Subunit Polyclonal Antibody - Item No. 10010671