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DATASHEET

Topiramate

Product overview

| | |
|--------------------------|---|
| Name | Topiramate |
| Cat No | HB0618 |
| Alternative names | Topamax |
| Biological action | Antagonist |
| Purity | >99% |
| Description | Selective GluK1 kainate receptor antagonist |

Images



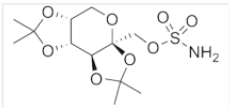
Biological Data

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|-------------------------------|--|
| Biological description | Selective GluK1 kainate receptor antagonist ($IC_{50} = 0.46 \mu M$). Also, positive allosteric GABA _A receptor modulator and inhibits carbonic anhydrase (K_i values for rat carbonic anhydrase II and IV are 0.1-1 and 0.2 μM respectively). Inhibits L-type Ca^{2+} and Na_v channels ($IC_{50} = 48.9 \mu M$). Shows anticonvulsant activity. |
|-------------------------------|--|

Solubility & Handling

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|-----------------------------|---|
| Storage instructions | +4 °C |
| Solubility overview | Soluble in DMSO (100mM) and in ethanol (100mM) |
| Important | This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use. |

Chemical Data

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|---------------------------|---|
| Chemical name | 2,3:4,5-Bis-O-(1-methylethylidene)- β -D-fructopyranose sulfamate |
| Molecular Weight | 339.36 |
| Chemical structure |  The chemical structure shows a fructose ring in its pyranose form, with a sulfamate group (-SO ₂ NH ₂) attached to the C2 position. The C3 and C4 positions are linked to a C5 position via an acetal bridge, which is further substituted with two methyl groups. |
| Molecular Formula | C ₁₂ H ₂₁ NO ₈ S |
| CAS Number | 97240-79-4 |

| | |
|--------------------|---|
| PubChem identifier | 5284627 |
| SMILES | CC1(O[C@@H]2CO[C@@]3([C@H]([C@@H]2O1)OC(O3)(C)C)COS(=O)(=O)N)C |
| InChi | InChI=1S/C12H21NO8S/c1-10(2)18-7-5-16-12(6-17-22(13,14)15)9(8(7)19-10)20-11(3,4)21-12/h7-9 H,5-6H2,1-4H3,(H2,13,14,15)/t7-,8-,9+,12+/m1/s1 |
| InChiKey | KJADKKWYZYXHBB-XBWDGYHZSA-N |
| MDL number | MFCD00865320 |

References

Topiramate attenuates voltage-gated sodium currents in rat cerebellar granule cells.

Zona C *et al* (1997) *Neurosci Lett* 231(3)

PubMedID [9300637](#)

Topiramate as an inhibitor of carbonic anhydrase isoenzymes.

Dodgson SJ *et al* (2000) *Epilepsia* 41 Suppl 1

PubMedID [10768298](#)

Selective antagonism of GluR5 kainate-receptor-mediated synaptic currents by topiramate in rat basolateral amygdala neurons.

Gryder DS *et al* (2003) *J Neurosci* 23(18)

PubMedID [12904467](#)

Topiramate modulation of $\beta(1)$ - and $\beta(3)$ -homomeric GABA(A) receptors.

Simeone TA *et al* (2011) *Pharmacol Res* 64(1)

PubMedID [21421049](#)
