

Hello Bio, Inc.  
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500  
F. 609-228-4994

customercare-usa@hellobio.com



## DATASHEET

Topiramate

### Product overview

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

### Images



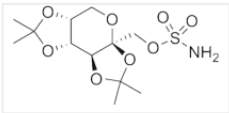
### Biological Data

<b>Biological description</b>	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 $\mu M$ respectively). Inhibits L-type $Ca^{2+}$ and $Na_v$ channels ( $IC_{50} = 48.9 \mu M$ ). Shows anticonvulsant activity.
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### Solubility & Handling

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

### Chemical Data

<b>Chemical name</b>	2,3:4,5-Bis-O-(1-methylethylidene)- $\beta$ -D-fructopyranose sulfamate
<b>Molecular Weight</b>	339.36
<b>Chemical structure</b>	 The chemical structure shows a fructose molecule in its pyranose form, with a 1-methylethylidene group protecting the 2,3-diol and a sulfamate group (-SO <sub>2</sub> NH <sub>2</sub> ) attached to the 6-position.
<b>Molecular Formula</b>	$C_{12}H_{21}NO_8S$
<b>CAS Number</b>	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	MFC000865320

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## 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](#)

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