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DATASHEET

(-)-Bicuculline methobromide

Product overview

Name (-)-Bicuculline methobromide

Cat No HB0894
Alternative names BIC
Biological action Antagonist
Purity >98%

Description Prototypic, competitive GABA_A receptor antagonist

Images







Biological Data

Biological description

Methobromide salt form of (+)-bicuculline.

Prototypic, competitive $GABA_A$ receptor antagonist which displaces GABA from the agonist binding site to prevent receptor activation.

Also acts as a negative allosteric inhibitor of channel opening to inhibit $GABA_A$ receptor activation by anaesthetic agents.

Additionally shows activity at SK calcium-activated potassium channels, nicotinic acetylcholine receptors and acetylcholinesterase.

Reversibly and competitively blocks GABA_A receptor mediated currents. Widely used to isolate glutamate receptor mediated EPSCs (excitatory postsynaptic potentials).

Shows convulsant action and induces epilepsy.

Application notes

Freebase, methiodide and methochloride salts also available.

The GABA_A receptor antagonist bicuculline is commonly used to reduce levels of inhibition by blocking the actions of the neurotransmitter GABA. Bicuculline is commonly used at concentrations of 100 μ M and above. Bicuculline methobromide from Hello Bio reduces both spontaneous inhibitory post synaptic currents (IPSC) and evoked IPSCs (see Fig 1 above). It was effective at concentrations of 1 mM with complete receptor blockade at 100 μ M

#Protocol 1: Evoked and spontaneous inhibitory post synaptic currents (IPSCs)

- Whole cell voltage clamp recordings were obtained from layer V neurons of the mouse prelimbic cortex brain slice.
- A stimulating electrode was placed in layers II/III and IPSCs were evoked by a single square (150 μ s) pulse every 10 sec at a stimulus intensity that gave a reliable IPSC.
- IPSCs were evoked at a range of neuron holding voltages to measure the reversal potential of the current to ensure it was GABAergic.
- Neurons were held at 0mV and IPSCs continuously stimulated and recorded in response to 5 min applications of varying concentrations of Gabazine until complete receptor inhibition.
- Spontaneous IPSCs were recorded before and after addition of Gabazine by holding the neuron at 0mV and recording for 10 sec.
- All recordings for IPSCs were made in the presence of AMPAR antagonists.

Solubility & Handling

Storage instructions Solubility overview Important Room temperature Soluble in water (50mM)

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not

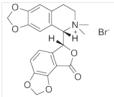
for human or veterinary use.

Chemical Data

Chemical name $[R-(R^*,S^*)]-5-(6,8-Dihydro-8-oxofuro[3,4-e]$

Molecular Weight Chemical structure]-1,3-benzodioxol-6-yl)-5,6,7,8-tetrahydro-6,6-dimethyl-1,3-dioxolo[4,5-g]isoquinolinium bromide

462.3



Molecular Formula
CAS Number
PubChem identifier

InChi InChi=1S/C21H20NO6.BrH/c1-22(2)6-5-11-7-15-16(26-9-25-15)8-13(11)18(22)19-12-3-4-14-20(27-

10-24-14)17(12)21(23)28-19;/h3-4,7-8,18-19H,5-6,9-10H2,1-2H3;1H/q+1;/p-1

InChiKey BWXCECYGGMGBHD-UHFFFAOYSA-M

171729

C₂₁H₂₀BrNO₆ 73604-30-5

MDL number MFCD00055149
Appearance White solid

References

Advantages of an antagonist: bicuculline and other GABA antagonists.

Johnston GA (2013) Br J Pharmacol 169(2) **PubMedID**23425285

Differential effects of iontophoretic in vivo application of the GABA(A)-antagonists bicuculline and gabazine in sensory cortex

Kurt S *et al* (2006) Hear Res 212(1-2) **PubMedID**16442250

[Bicuculline inhibits airway remodeling in a murine model of chronic asthma].

Zhu T et al (2010) Nan Fang Yi Ke Da Xue Xue Bao 30(4)

PubMedID 20423862

