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DATASHEET

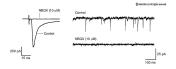
NBQX

Product overview

NameNBQXCat NoHB0442Alternative namesFG9202Biological actionAntagonistPurity>98%

Description Potent, selective, competitive AMPA receptor antagonist

Images







Biological Data

Biological description

Application notes

Potent, selective and competitive AMPA receptor antagonist. Also kainate receptor antagonist. Blocks the induction of excitatory post synaptic currents. Shows neuroprotective, antinociceptive and anticonvulsive actions. Water soluble, NBQX disodium salt also available.

The AMPA receptor antagonist NBQX inhibits the actions of glutamate acting at AMPARs and is commonly used at 10 μ M. NBQX from Hello Bio reduces spontaneous and evoked excitatory post synaptic currents (EPSCs) (see Fig 1 above). Complete AMPA receptor blockade was achieved at 10 μ M and NBQX was also effective at 1 μ M. NBQX was dissolved in DMSO.

#Protocol 1: Evoked and spontaneous excitatory post synaptic currents (EPSCs)

- Whole cell voltage clamp recordings were obtained from layer V neurons of the mouse prelimbic cortex brain slice.
- \bullet EPSCs were evoked via a stimulating electrode placed in layers II/III delivering a single square (150 μs) pulse every 10 sec at an intensity that gave a reliable EPSC.
- Neurons were held at -70 to -60 mV (the reversal potential of GABA currents).
 EPSCs were continuously stimulated and recorded in response to 5 min applications of varying concentrations of NBQX until complete receptor inhibition.
- Spontaneous EPSCs were recorded before and after addition of NBQX by holding the neuron at -70 mV and recording for 10 sec.
- Recordings for EPSCs were made in the absence of GABA_A-R antagonists.

Solubility & Handling

Solubility overview Soluble in DMSO (100mM)
Storage instructions Room temperature

Storage of solutions Prepare and use solutions on the same day if possible. Store solutions at -20 °C for up to one month if

storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Shipping Conditions Stable for ambient temperature shipping. Follow storage instructions on receipt.

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

Chemical name 2,3-Dioxo-6-nitro-1,2,3,4-tetrahydrobenzo[f]quinoxaline-7-sulfonamide

Molecular Weight 336.28

Chemical structure

nula $C_{12}H_8N_4O_6S$

H₂NO₂S

Molecular Formula $C_{12}H_8N_4O_6S$ CAS Number118876-58-7PubChem identifier3272524

Source Synthetic

InChi InChi=1S/C12H8N4O6S/c13-23(21,22)8-3-1-2-5-9(8)7(16(19)20)4-6-10(5)15-12(18)11(17)14-6/h1-

4H,(H,14,17)(H,15,18)(H2,13,21,22)

InChiKey UQNAFPHGVPVTAL-UHFFFAOYSA-N

MDL number MFCD11046016 Appearance Yellow solid

References

It is AMPA receptor, not kainate receptor, that contributes to the NBQX-induced antinociception in the spinal cord of rats.

Kong LL *et al* (2006) Brain Res 1100(1) **PubMedID**16777075

Competitive inhibition by NBQX of kainate/AMPA receptor currents and excitatory synaptic potentials: importance of 6-nitro substitution.

Randle JC *et al* (1992) Eur J Pharmacol 215(2-3) **PubMedID** 1382998

Both MK801 and NBQX reduce the neuronal damage after impact-acceleration brain injury.

Goda M *et al* (2002) J Neurotrauma 19(11) **PubMedID** 12490009

Antiepileptogenic and anticonvulsant effects of NBQX, a selective AMPA receptor antagonist, in the rat kindling model of epilepsy.

Namba T *et al* (1994) Brain Res 638(1-2) **PubMedID**8199874

Pharmacological characterization of glutamatergic agonists and antagonists at recombinant human homomeric and heteromeric kainate receptors in vitro.

Alt et al (2004) Neuropharmacology 46(6) **PubMedID** 15033339