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DATASHEET

DNQX disodium salt

Product overview

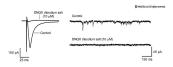
Name DNQX disodium salt

Cat No HB0262
Biological action Antagonist
Purity >98%

Customer comments DNQX disodium salt is a good product Verified customer, Research University Paris

Description Selective, competitive AMPA / kainate receptor antagonist. Sodium salt.

Images







Biological Data

Biological description

DNQX disodium salt is a water soluble, selective and competitive AMPA and kainate receptor antagonist. It also acts as partial AMPA agonist in the presence of $\gamma 2$ transmembrane AMPA receptor regulatory proteins (TARP) subunit.

DNQX is also a neuroleptic agent that displays pro-oxidant activity.

Application notes

DNQX freebase is also available.

DNQX disodium salt antagonizes the actions of glutamate at AMPA receptors. It is commonly used to reduce excitatory post synaptic currents (EPSC) and is commonly used at 10 μ M. DNQX disodium salt from Hello Bio completely blocks both spontaneous and evoked EPSCs at 10 μ M, with concentrations of 1 μ M also effective (see Fig 1 above).

#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.
- EPSCs were evoked via a stimulating electrode placed in layers II/III delivering a single square (150 μ s) 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 DNQX disodium salt until complete receptor inhibition.
- Spontaneous EPSCs were recorded before and after addition of DNQX disodium

• Recordings for EPSCs were made in the absence of GABA_A-R antagonists.

Solubility & Handling

Storage instructions Solubility overview Important Room temperature (desiccate) Soluble in water (100mM)

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 6,7-Dinitroquinoxaline-2,3-dione disodium salt

Molecular Weight 296.

Chemical structure

O₂N N ONa ONa

Molecular Formula $C_8H_2N_4Na_2O_6$ CAS Number1312992-24-7PubChem identifier45073428

Source Synthetic

InChi InChi=1S/C8H4N4O6.2Na/c13-7-8(14)10-4-2-6(12(17)18)5(11(15)16)1-3(4)9-7;;/h1-2H,(H,9,13)(H,1

0,14);;/q;2*+1/p-2

InChiKey GPSBSOYURFUVKJ-UHFFFAOYSA-L

Appearance Brown solid

References

Redox properties and prooxidant cytotoxicity of a neuroleptic agent 6,7-dinitrodihydroquinoxaline-2,3-dione (DNQX).

Šarlauskas J *et al* (2013) Acta Biochim Pol 60(2) **PubMedID**23757451

TARP auxiliary subunits switch AMPA receptor antagonists into partial agonists.

Menuz K *et al* (2007) Science 318(5851) **PubMedID** 17975069

Selective excitatory actions of DNQX and CNQX in rat thalamic neurons.

Lee SH *et al* (2010) J Neurophysiol 103(4) **PubMedID** 20107128

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