Product overview

Name
NBQX disodium salt

Cat No
HB0443

Short description
Potent, selective, competitive AMPA receptor antagonist. Disodium salt.

Biological description
Potent, selective and competitive AMPA receptor antagonist. Also kainate receptor antagonist. Water soluble, disodium salt. Shows neuroprotective, antinoceptive and anticonvulsive actions. NBQX also available.

Biological action
Antagonist

Purity
>98%

Customer comments

High quality and affordable! We use this compound routinely in the lab for neuronal recordings. Verified customer, The University of Montana

Worked just as it should, results indistinguishable from our previous product but at a significant cost reduction! Verified customer, The University of Toronto

Good quality and great price! Verified customer, The University of Newcastle

NBQX disodium salt produced by Hello Bio produced a very potent and “clean” block of synaptic AMPA currents, with no effect on other GABAA or NMDA receptors. Verified customer, The University of Edinburgh

Images

![Image 1: NBQX disodium salt inhibition of evoked and spontaneous glutamate mediated EPSCs in mouse cortical neuron](image1.png)

The AMPA receptor antagonist NBQX disodium salt inhibits the actions of glutamate by acting at AMPARs and is commonly used at 10 μM. NBQX disodium salt from Hello Bio inhibits spontaneous and evoked excitatory postsynaptic currents (EPSCs). Complete AMPA receptor blockade was achieved at 10 μM and NBQX disodium salt was also effective at reducing these currents at 1 μM. For assay protocol see #Protocol 1 in Application Notes below.

![Image 2: Percentage inhibition of glutamate (50 μM) stimulated increase of Ca²⁺ fluorescence in HEK293 cells expressing GluK2](image2.png)

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**High quality & affordable! We use this routinely in the lab for neuronal recordings**

Verified Customer, University of Montana
The AMPA receptor antagonist NBQX disodium salt inhibits the actions of glutamate by acting at AMPARs and is commonly used at 10 μM. NBQX disodium salt from Hello Bio inhibits spontaneous and evoked excitatory post synaptic currents (EPSCs) (see Fig 1 above). Complete AMPA receptor blockade was achieved at 10 μM and NBQX disodium salt was also effective at reducing these currents at 1 μM.

#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 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 disodium salt until complete receptor inhibition.
- Spontaneous EPSCs were recorded before and after addition of NBQX disodium salt by holding the neuron at -70 mV and recording for 10 sec.
- Recordings for EPSCs were made in the absence of GABA\(\alpha\)-R antagonists.

**Applications**

**Application notes**

**Storing and Using Your Product**

**Storage instructions**

-20°C

**Solubility overview**

Soluble in water (100mM)

**Important**

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

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


**PubMedID:** 16777075

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


**PubMedID:** 1382998

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


**PubMedID:** 12490009

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


**PubMedID:** 8199874

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


**PubMedID:** 15033339