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

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

customercare-usa@hellobio.com



DATASHEET

CNQX

Product overview

Name CNQX
Cat No HB0204
Biological action Antagonist
Purity >98%

Customer comments

Absolute satisfaction not only with item received, but especially with communication. This product (CNQX) meets our expectation and description as declared on websites. Communication was immediate and fast. Item came second day after purchase has been done, firmly packed. Unrivaled prices, friendly approach! Verified customer, National institute of mental health Czech

Republic

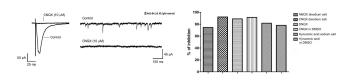
Another quality compound! CNQX from Hello Bio works great in our experiments and at a price that is definitely nice! We continue to be impressed with the value we get from this company. Verified

customer, University of South Carolina

Description

Potent, competitive AMPA / kainate receptor antagonist

Images







Biological Data

Biological description

Potent and competitive AMPA and kainate receptor antagonist. Also antagonises NMDA receptors at the glycine site. Increases $GABA_A$ receptor spontaneous postsynaptic currents (sPSCs). Shows neuroprotective actions. Water soluble, CNQX disodium salt also available.

Application notes

The AMPA receptor antagonist CNQX is commonly used at concentrations of 10 μ M to inhibit the actions of glutamate acting on AMPARs.

CNQX from Hello Bio reduces both spontaneous and evoked EPSCs in cortical neurons at concentrations of 1 μ M with full AMPA receptor blockade at 10 μ M (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 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 CNQX until complete receptor inhibition.

- Spontaneous EPSCs were recorded before and after addition of CNQX 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 6-Cyano-7-nitroquinoxaline-2,3-dione

Molecular Weight 232.16

Chemical structure

O₂N N O

SMILES C1=C(C(=CC2=C1NC(=O)C(=O)N2)[N+](=O)[O-])C#N

Source Synthetic

InChi InChi=1S/C9H4N4O4/c10-3-4-1-5-6(2-7(4)13(16)17)12-9(15)8(14)11-5/h1-2H,(H,11,14)(H,12,15)

InChiKey RPXVIAFEQBNEAX-UHFFFAOYSA-N

MDL number MFCD00069232 Appearance Yellow solid

References

6,7-Dinitro-quinoxaline-2,3-dion and 6-nitro,7-cyano-quinoxaline-2,3-dion antagonise responses to NMDA in the rat spinal cord via an action at the strychnine-insensitive glycine receptor.

Birch PJ *et al* (1988) Eur J Pharmacol 156(1) **PubMedID** 2905271

The calpain inhibitor MDL-28170 and the AMPA/KA receptor antagonist CNQX inhibit neurofilament degradation and enhance neuronal survival in kainic acid-treated hippocampal slice cultures.

Lopez-Picon FR et al (2006) Eur J Neurosci 23(10)

PubMedID 16817871

6-Cyano-7-nitroquinoxaline-2,3-dione (CNQX) increases GABAA receptor-mediated spontaneous postsynaptic currents in the dentate granule cells of rat hippocampal slices.

Hashimoto Y *et al* (2004) Neurosci Lett 358(1) **PubMedID** 15016428

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

Dop neuron glutamate cotransmission evokes a delayed excitation in lateral dorsal striatal cholinergic interneurons

Chuhma et al (2018) eLIFE 7:e39786