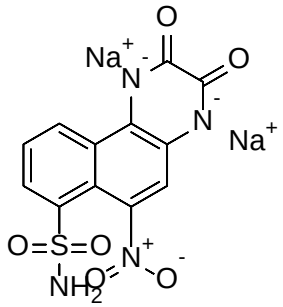
Product data sheet

MedKoo Cat#: 522529 Name: NBQX sodium CAS: 479347-86-9 (sodium) Chemical Formula: $C_{12}H_6N_4Na_2O_6S$ Exact Mass: 336.0165 Molecular Weight: 380.2415	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

NBQX, also known as FG9202, is an AMPA receptor antagonist. NBQX blocks AMPA receptors in micromolar concentrations (~10–20 μM) and also blocks kainate receptors. In experiments, it is used to counter glutamate excitotoxicity. NBQX was found to have anticonvulsant activity in rodent seizure models. As the disodium salt, NBQX is soluble in water at high concentrations (at least up to 100 mM).

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	1.0	2.63
DMSO	20.0	52.60
Water	38.02	100.0

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.63 mL	13.15 mL	26.3 mL
5 mM	0.53 mL	2.63 mL	5.26 mL
10 mM	0.26 mL	1.31 mL	2.63 mL
50 mM	0.05 mL	0.26 mL	0.53 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Yu W, Miller RF. NBQX suppresses inhibitory glycine currents in retinal ganglion cells. Neuroreport. 1994 Aug 15;5(13):1558-60. doi: 10.1097/00001756-199408150-00004. PMID: 7529589.

In vivo study

1. Chen W, Li YS, Gao J, Lin XY, Li XH. AMPA Receptor Antagonist NBQX Decreased Seizures by Normalization of Perineuronal Nets. PLoS One. 2016 Nov 23;11(11):e0166672. doi: 10.1371/journal.pone.0166672. PMID: 27880801; PMCID: PMC5120819.
2. Gill R, Nordholm L, Lodge D. The neuroprotective actions of 2,3-dihydroxy-6-nitro-7-sulfamoyl-benzo(F)quinoxaline (NBQX) in a rat focal ischaemia model. Brain Res. 1992 May 15;580(1-2):35-43. doi: 10.1016/0006-8993(92)90924-x. PMID: 1504814.

7. Bioactivity

Biological target:

NBQX disodium (FG9202 disodium) is a highly selective and competitive AMPA receptor antagonist.

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In vitro activity

At 50 microM, NBQX significantly attenuated the inhibitory currents induced by the exogenous application of 100 microM glycine as observed using whole-cell recordings from ganglion cells in a slice preparation of the tiger salamander retina.

Reference: Neuroreport. 1994 Aug 15;5(13):1558-60. https://pubmed.ncbi.nlm.nih.gov/7529589/

In vivo activity

Rats were intraperitoneally (i.p.) injected with pentylenetetrazole (PTZ, 50 mg/kg) for 28 consecutive days to establish chronic epilepsy models. Subsequently, NBQX (20 mg/kg, i.p.) was injected for 3 days for the observation of behavioral measurements of epilepsy. The results showed that there are reduction of PNNs and decrease of tenascin-R, aggrecan and neurocan in the medial prefrontal cortex (mPFC) in the rats injected with PTZ. However, NBQX treatment normalized PNNs, tenascin-R, aggrecan and neurocan levels. NBQX was sufficient to decrease seizures through increasing the latency to seizures, decrease the duration of seizure onset, and reduce the scores for the severity of seizures.

Reference: PLoS One. 2016 Nov 23;11(11):e0166672. https://pubmed.ncbi.nlm.nih.gov/27880801/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.