NBQX

Cat. No.: HY-15068

CAS No.: 118876-58-7

Molecular Formula: $C_{12}H_8N_4O_6S$

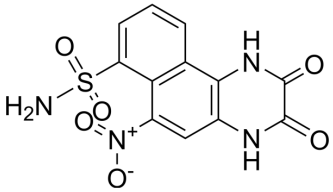
Molecular Weight: 336.28

Target: iGluR

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 75 mg/mL (223.03 mM)

H_2O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.9737 mL	14.8686 mL	29.7371 mL
5 mM	0.5947 mL	2.9737 mL	5.9474 mL
10 mM	0.2974 mL	1.4869 mL	2.9737 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (7.43 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.43 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.43 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NBQX (FG9202) is a highly selective and competitive AMPA receptor antagonist. NBQX has neuroprotective and anticonvulsant activity[1].

IC_{50} & Target

AMPA receptor[1]

In Vitro	NBQX (FG9202) has a high affinity for AMPA and kainate binding sites with little or no affinity for the glutamate recognition site on the NMDA receptor complex[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	NBQX (FG9202; 20 mg/kg, i.p.; for 3 days) decreases seizures induced by PTZ[2]. NBQX is neuroprotective in a focal ischaemia model in the rat when given as an i.v. bolus dose of 30 mg/kg at the time of MCA occlusion and again at 1 h post occlusion[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar rats that weighed 220-240 g with pentylenetetrazole (PTZ)[2]
Dosage:	20 mg/kg
Administration:	IP; for 3 days
Result:	Effectively reversed the behavioral abnormality of epileptic seizures of chronic PTZ administration (50mg/kg; i.p.; for 28 days) in rats.

CUSTOMER VALIDATION

- Nat Med. 2019 Feb;25(2):337-349.
- Theranostics. 2023 May 11;13(9):2946-2961.
- J Neurochem. 2022 Jul 1.
- Sci Rep. 2024 Mar 12;14(1):6011.
- Neural Plast. 08 Jul 2021.

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REFERENCES

[1]. Fukushima K, et al. Characterization of Human Hippocampal Neural Stem/Progenitor Cells and Their Application to Physiologically Relevant Assays for Multiple Ionotropic Glutamate Receptors. J Biomol Screen. 2014 Sep; 19(8):1174-84.

[2]. Wen Chen, et al. AMPA Receptor Antagonist NBQX Decreased Seizures by Normalization of Perineuronal Nets. PLoS One. 2016 Nov 23;11(11):e0166672.

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