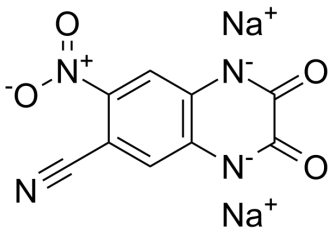
CNQX disodium

Cat. No.:	HY-15066A
CAS No.:	479347-85-8
Molecular Formula:	$C_9H_2N_4Na_2O_4$
Molecular Weight:	276.12
Target:	iGluR
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	CNQX disodium (FG9065 disodium) is a potent and competitive AMPA/kainate receptor antagonist with IC_{50}s of 0.3 μM and 1.5 μM, respectively. CNQX disodium is a competitive non-NMDA receptor antagonist[1]. CNQX disodium blocks the expression of fear-potentiated startle in rats[5].
IC_{50} & Target	IC50: 0.3 μM (AMPA) and 1.5 μM (kainate receptor)[1]
In Vitro	CNQX disodium (FG9065 disodium; 2-5 μM) reversibly blocks the Schaffer collateral and mossy fibre excitatory postsynaptic potential (EPSP), while sparing the fast and slow GABA-mediated inhibition in superfusion of hippocampal slices[2]. CNQX disodium (1-5 μM) produces a selective and dose-dependent reduction in the amplitude of the monosynaptic component of the DR-VRR recorded from lumbar spinal segments[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	CNQX disodium (FG9065 disodium; 0.75-3 mg/kg; IP; 20 min before testing) decreased the number of cocaine responses in a dose-dependent manner during the first 15-min cocaine-free interval[4]. The bilateral infusion of CNQX disodium (0.5 or 1.25 μg) into the amygdala or dorsal hippocampus 10 min prior to a retention test partially blocks the expression of stepdown inhibitory avoidance in rats 24 h after training. CNQX disodium causes a complete blockade at a dose of 0.5 μg[5]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar rats weighing 180-200 g[4]
Dosage:	0.75, 1.5, and 3 mg/kg
Administration:	IP; 20 min before testing
Result:	Decreased the number of cocaine (IV; 0.25 mg/infusion) responses in a dose-dependent manner during the first 15-min cocaine-free interval.

CUSTOMER VALIDATION

- Biomed Pharmacother. January 2022, 112446.

- J Cell Mol Med. 2021 Aug;25(15):7342-7353.
- Front Cell Neurosci. 2019 Jun 25;13:276.

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REFERENCES

[1]. T Honoré, et al. Quinoxalinediones: Potent Competitive non-NMDA Glutamate Receptor Antagonists. Science. 1988 Aug 5;241(4866):701-3.

[2]. Alford S, et al. CNQX and DNQX block non-NMDA synaptic transmission but not NMDA-evoked locomotion in lamprey spinal cord. Brain Res. 1990 Jan 8;506(2):297-302.

[3]. Neuman RS, et al. Blockade of excitatory synaptic transmission by 6-cyano-7-nitroquinoxaline-2,3-dione(CNQX) in the hippocampus in vitro. Neurosci Lett. 1988 Sep 23;92(1):64-8.

[4]. Kim M, et al. Infusion of the non-NMDA receptor antagonist CNQX into the amygdala blocks the expression of fear-potentiated startle. Behav Neural Biol. 1993 Jan;59(1):5-8.

[5]. Pia Bäckström, et al. Attenuation of Cocaine-Seeking Behaviour by the AMPA/kainate Receptor Antagonist CNQX in Rats. Psychopharmacology (Berl). 2003 Feb;166(1):69-76.

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