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产品名称：6-氰基-7-硝基喹喔啉-2,3-二酮
产品别名：CNQX；FG9065

生物活性：

Description	CNQX (FG9065) is a potent AMPA/kainate receptor antagonist.
In Vitro	In rat hippocampal slices bathed in Mg^{2+}-free medium, 10 μM CNQX reversibly blocks responses to a-amino-3-hydroxy-5-methyl-4-isoxazole-propionic acid (AMPA), quisqualate and kainate but not NMDA[1]. Superfusion of hippocampal slices with 6-cyano-7-nitroquinoxaline-2,3-dione (CNQX, 2-5 μM) reversibly blocks the Schaffer collateral and mossy fibre excitatory postsynaptic potential (EPSP), while sparing the fast and slow GABA-mediated inhibition[2]. CNQX (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]. CNQX-mediated depolarizations are mediated by AMPAR but not kainate receptors in TRN neurons[4].
In Vivo	The bilateral infusion of CNQX (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 causes a complete blockade at a dose of 0.5 μg[5].

Solvent&Solubility

In Vitro:

DMSO : ≥ 30 mg/mL (129.23 mM)

H_2O : < 0.1 mg/mL (insoluble)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.3076 mL	21.5378 mL	43.0756 mL
	5 mM	0.8615 mL	4.3076 mL	8.6151 mL
	10 mM	0.4308 mL	2.1538 mL	4.3076 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: ≥ 2.5 mg/mL (10.77 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (10.77 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。

References	[1]. Blake JF, et al. CNQX blocks acidic amino acid induced depolarizations and synaptic components mediated by non-NMDA receptors in rathippocampal slices. Neurosci Lett. 1988 Jun 29;89(2):182-6. [2]. 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. [3]. 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. [4]. Lee SH, et al. Selective excitatory actions of DNQX and CNQX in rat thalamic neurons. J Neurophysiol. 2010 Apr;103(4):1728-34. [5]. 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.

实验参考：

Cell Assay	CNQX is applied by injecting a bolus into the input line of the chamber over 60 s using a motorized syringe pump. In a subpopulation of neurons, CNQX is bath applied for 5 min. Control injections of physiological saline or vehicle (DMSO) does not alter membrane potential/input resistance during voltage recordings[4].
References	[1]. Blake JF, et al. CNQX blocks acidic amino acid induced depolarizations and synaptic components mediated by non-NMDA receptors in rathippocampal slices. Neurosci Lett. 1988 Jun 29;89(2):182-6. [2]. 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. [3]. 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. [4]. Lee SH, et al. Selective excitatory actions of DNQX and CNQX in rat thalamic neurons. J Neurophysiol. 2010 Apr;103(4):1728-34. [5]. 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.