PEAQX tetrasodium hydrate

Cat. No.: HY-12294A

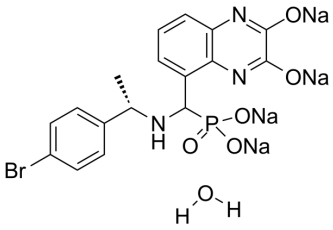
Molecular Formula: $C_{17}H_{15}BrN_3Na_4O_6P$

Molecular Weight: 560.15

Target: iGluR; Apoptosis

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Apoptosis

Storage: 4°C, sealed storage, away from moisture
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 25.5 mg/mL (45.52 mM; Need ultrasonic and warming)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7852 mL	8.9262 mL	17.8524 mL
	5 mM	0.3570 mL	1.7852 mL	3.5705 mL
	10 mM	0.1785 mL	0.8926 mL	1.7852 mL

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

In Vivo

1. Add each solvent one by one: PBS
Solubility: 100 mg/mL (178.52 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

PEAQX (NVP-AAM077) tetrasodium hydrate is a potent, selective and orally active NMDA antagonist, with IC_{50} values of 270 nM and 29600 nM for hNMDAR 1A/2A and hNMDAR 1A/2B, respectively[1].

IC_{50} & Target

NMDA Receptor

In Vitro

PEAQX (3 μM) produces similar caspase-3 activation, while NVP-AAM007 is approximately three-fold more potent[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

PEAQX (10-40 mg/kg) dose-dependently increased cortical caspase-3 activity following sub-chronic administration[2].
PEAQX (10 and 20 mg/kg) shows enhanced locomotor activity in response to PCP challenge (4 mg/kg on PN28-35) compared to saline pretreatment ($F_{3, 73}$=4.99)[2].
PEAQX (10 mg/kg, ip) antagonizes the effects of PRE084 on CaMKIV-TORC1-CREB and BDNF, even for learning and memory impairment[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Timed, day 14 pregnant female Sprague-Dawley rats[2].
Dosage:	10, 20 or 40 mg/kg.
Administration:	S.C.
Result:	Showed a sensitized locomotor response to PCP challenge on PN28-35.

Animal Model:	Timed, day 14 pregnant female Sprague-Dawley rats[2].
Dosage:	4 mg/kg.
Administration:	I.P.
Result:	Did not significantly increase locomotor activity in rats treated sub-chronically with PEAQX on PN7, 9 and 11.

Animal Model:	11-week old C57BL/6 mice[3].
Dosage:	10 mg/kg.
Administration:	IP.
Result:	Reversed the effect of PRE084 ($F_{3,78}$ = 10.446, p<0.01).

CUSTOMER VALIDATION

- J Clin Invest. 2019 Sep 3;129(9):3864-3876.
- Cells. 2023 Apr 22, 12(9), 1212.
- Front Neurosci. 2021; 15: 703044.
- Neuroscience. 2018 Nov 1;391:1-12.
- Am J Hypertens. 2021 Apr 15;hpab047.

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REFERENCES

[1]. Auberson YP, et al. 5-Phosphonomethylquinoxalinediones as competitive NMDA receptor antagonists with a preference for the human 1A/2A, rather than 1A/2B receptor composition. Bioorg Med Chem Lett. 2002 Apr 8;12(7):1099-102.

[2]. Anastasio NC, et al. Differential role of N-methyl-D-aspartate receptor subunits 2A and 2B in mediating phencyclidine-induced perinatal neuronal apoptosis and behavioral deficits. Neuroscience. 2009 Nov 10;163(4):1181-91.

[3]. Qian Xu, et al. Sigma-1 receptor in brain ischemia/reperfusion: Possible role in the NR2A-induced pathway to regulate brain-derived neurotrophic factor. J Neurol Sci. 2017 May 15;376:166-175.

Caution: Product has not been fully validated for medical applications. For research use only.

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