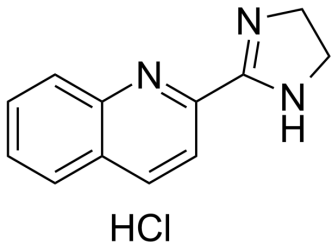
BU224 hydrochloride

Cat. No.:	HY-101170
CAS No.:	205437-64-5
Molecular Formula:	$C_{12}H_{12}ClN_3$
Molecular Weight:	233.7
Target:	Imidazoline Receptor; Apoptosis; TNF Receptor
Pathway:	Neuronal Signaling; Apoptosis
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 12.5 mg/mL (53.49 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.2790 mL	21.3950 mL	42.7899 mL
	5 mM	0.8558 mL	4.2790 mL	8.5580 mL
	10 mM	0.4279 mL	2.1395 mL	4.2790 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: ≥ 1.25 mg/mL (5.35 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (5.35 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BU224 hydrochloride is a selective and high affinity imidazoline I_2 receptor ligand, with a K_i of 2.1 nM. BU224 hydrochloride is sometimes used as an I_2 receptor antagonist. BU224 hydrochloride exerts neuroprotective effects, with anti-inflammatory and anti-apoptotic properties. BU224 hydrochloride improves memory in 5XFAD mice, enlarging dendritic spines and reducing Aβ-induced changes in NMDARs. BU224 hydrochloride can be used for Alzheimer's disease research[1][2][3].

IC_{50} & Target

Ki: 2.1 nM (I_2)[1]

In Vivo

BU224 hydrochloride (5 mg/kg, IP, twice a day for 10 days) improves behavioural performance and memory function in 5XFAD mice[1].

BU224 hydrochloride (5 mg/kg, IP, twice a day for 10 days) reduces levels of the microglial marker Iba1 and pro-inflammatory cytokines IL-1β and TNF-α and increased the expression of astrocytic marker GFAP in 5XFAD mice[1].

BU224 hydrochloride (10 mg/kg, IP, once) reduces immobility of rats in the FST (forced swim test), indicative of antidepressant-like activity[2].

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

Animal Model:	5XFAD mice and and WT littermates (6-month-old)[1]
Dosage:	0 mg/kg, 5 mg/kg
Administration:	IP, twice a day for 10 days
Result:	Significantly increased immobility (54% increased freezing), and reversed memory deficits secondary to the deposition of Aβ in the brain.

REFERENCES

[1]. Mirzaei N, et al. Imidazoline ligand BU224 reverses cognitive deficits, reduces microgliosis and enhances synaptic connectivity in a mouse model of Alzheimer's disease. Br J Pharmacol. 2021 Feb;178(3):654-671.

[2]. Finn DP, et al. Behavioral, neuroendocrine and neurochemical effects of the imidazoline I2 receptor selective ligand BU224 in naive rats and rats exposed to the stress of the forced swim test. Psychopharmacology (Berl). 2003 May;167(2):195-202.

[3]. Qiu Y, et al. Discriminative stimulus effects of the imidazoline I2 receptor ligands BU224 and phenyzoline in rats. Eur J Pharmacol. 2015 Feb 15;749:133-41.

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