Nebracetam hydrochloride

Cat. No.: HY-113970A

CAS No.: 1177279-49-0

Molecular Formula: $C_{12}H_{17}ClN_2O$

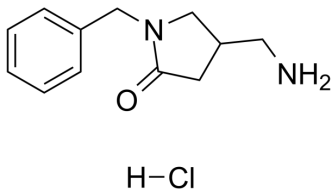
Molecular Weight: 240.73

Target: mAChR

Pathway: GPCR/G Protein; Neuronal Signaling

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

DMSO : 100 mg/mL (415.40 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	4.1540 mL	20.7702 mL	41.5403 mL
	5 mM	0.8308 mL	4.1540 mL	8.3081 mL
	10 mM	0.4154 mL	2.0770 mL	4.1540 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 (10.39 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.39 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.39 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Nebracetam hydrochloride, a nootropic M_1-muscarinic agonist, induces a rise of intracellular Ca^{2+} concentration. Nebracetam hydrochloride exhibits an EC_{50} of 1.59 mM for elevating $[Ca^{2+}]_i$[1].

In Vivo

Nebracetam (10 mg/kg, p.o.) involves not only cholinergic mechanisms but also involves lymbic and hippocampal noradrenergic mechanisms[2].

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

Animal Model:	Male Wistar rats weighing 200-250 g[2].

Dosage:	10, 20 mg/kg.
Administration:	P.O. (single dose).
Result:	Able to correct this scopolamine-induced disruption of spatial cognition.

REFERENCES

[1]. Kitamura Y, et al. Effects of nebracetam (WEB 1881 FU), a novel nootropic, as a M1-muscarinic agonist. Jpn J Pharmacol. 1991 Jan;55(1):177-80.

[2]. Iwasaki K, et al. Effect of nebracetam on the disruption of spatial cognition in rats. Jpn J Pharmacol. 1992 Feb;58(2):117-26.

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