(S)-UFR2709 hydrochloride

Cat. No.: HY-137231B

Molecular Formula: $C_{13}H_{18}ClNO_2$

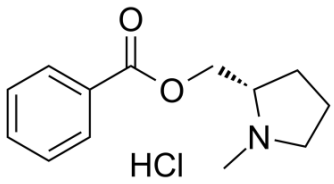
Molecular Weight: 255.74

Target: nAChR

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage: 4°C, stored under nitrogen

* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (195.51 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.9102 mL	19.5511 mL	39.1022 mL
	5 mM	0.7820 mL	3.9102 mL	7.8204 mL
	10 mM	0.3910 mL	1.9551 mL	3.9102 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 (9.78 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.78 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.78 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

(S)-UFR2709 (hydrochloride) is a competitive nAChR antagonist and displays higher affinity for $\alpha_4\beta_2$ nAChRs than for α_7 nAChRs. (S)-UFR2709 (hydrochloride) decreases anxiety and reduces ethanol consumption and ethanol preference in alcohol-preferring rats. (S)-UFR2709 (hydrochloride) acts as an anxiolytic agent and can be used for the study of nicotine addiction[1][2].

In Vitro

Brain nicotinic acetylcholine receptors (nAChRs) is a heterogeneous family of pentameric acetylcholine-gated cation channels, which is a molecular target for the treatment of alcohol abuse and dependence[1].

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

In Vivo

(S)-UFR2709 (hydrochloride) (50-100 μg/ml; 3 min and then maintained for another 5 min in a holding tank before testing the swimming behaviour in the test tank for a period of 5 min) produces a decrease in the bottom dwelling for NTT test, and UFR2709 induces a significant and dose-dependent decrease in bottom dwelling time to 52.9 and 87.0 s, respectively at 50 and 100 μg/ml[2].

(S)-UFR2709 (hydrochloride) (50-100 μg/ml) decreases nicotine-evoked mRNA expression of α4 nACh receptor subunit, but UFR2709 has less effect on α4 nACh receptor subunit in the brain of adult zebrafish[2].

(S)-UFR2709 (hydrochloride) (intraperitoneal injection; 1-10 mg/kg; daily; 17 days) reduces ethanol consumption and ethanol preference and increased water consumption in a dose-dependent manner. The most effective dose of UFR2709 is 2.5 mg/kg, it induces a 56% reduction in alcohol consumption. (S)-UFR2709 (hydrochloride) does not affect the weight or locomotor activity of the rats[1].

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

Animal Model:	High-alcohol-drinking UChB rats[1]
Dosage:	10 mg/kg, 5 mg/kg, 2.5 mg/kg, or 1 mg/kg
Administration:	Intraperitoneal injection; 1-10 mg/kg; daily; 17 days
Result:	Did not affect the weight or locomotor activity and reduced ethanol consumption and preference.

REFERENCES

[1]. Gabriel Quiroz, et al. UFR2709, a Nicotinic Acetylcholine Receptor Antagonist, Decreases Ethanol Intake in Alcohol-Preferring Rats. Front Pharmacol. 2019 Dec 3;10:1429.

[2]. Franco Viscarra, et al. Nicotinic Antagonist UFR2709 Inhibits Nicotine Reward and Decreases Anxiety in Zebrafish. Molecules. 2020 Jun 30;25(13):2998.

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