Rotundine

Cat. No.: HY-N0096

CAS No.: 483-14-7

Molecular Formula: $C_{21}H_{25}NO_4$

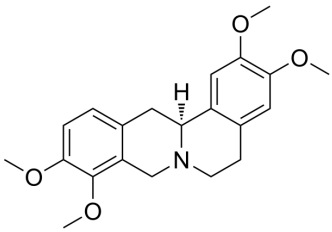
Molecular Weight: 355.43

Target: 5-HT Receptor; Dopamine Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (281.35 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	2.8135 mL	14.0675 mL	28.1349 mL
5 mM	0.5627 mL	2.8135 mL	5.6270 mL
10 mM	0.2813 mL	1.4067 mL	2.8135 mL

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

BIOLOGICAL ACTIVITY

Description

Rotundine is an antagonist of dopamine D1, D2 and D3 receptors with IC_{50}s of 166 nM, 1.4 μM and 3.3 μM, respectively. Rotundine is also an antagonist of 5-HT_{1A} with an IC_{50} of 370 nM.

IC_{50} & Target

D_1 Receptor	D_2 Receptor	D_3 Receptor	5-HT_{1A} Receptor
166 nM (IC_{50})	1400 nM (IC_{50})	3300 nM (IC_{50})	370 nM (IC_{50})

In Vivo

It is reported that Rotundine (l-THP) possesses a blocking effect on dopamine D_1 and D2 receptors and can inhibit physical dependence in morphine dependent mice and significantly reduce the development of the conditional place preference induced by morphine in mice. On day 1 and 7, there is no difference in locomotor counts between the Rotundine groups (6.25, 12.5, and 18.75 mg/kg) and saline group [$F(3, 37)=1.360$, $P>0.05$, $F(3, 37)=0.348$, $P>0.05$, respectively]. Locomotor counts are greatly increased in the oxycodone group compare with the saline group. Rotundine at doses of 6.25, 12.5, and 18.75 mg/kg antagonizes hyperactivity induced by oxycodone [$F(4, 60)=15.76$, $P<0.01$]. Rotundine (6.25, 12.5 mg/kg) does not affect the magnitude of sensitization, but there is a marked difference between oxycodone+oxycodone group and Rotundine

(18.75 mg/kg)+oxycodone+oxycodone group, indicating that Rotundine (18.75 mg/kg) greatly inhibits the development of oxycodone sensitization [F(4, 62)=8.766, P<0.01][2].

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

PROTOCOL

Animal Administration [2]

Kunming mice, initially weighing 18 to 22 g are used in this study. Four groups of mice are given Rotundine (l-THP) (6.25, 12.5, and 18.75 mg/kg) or saline, respectively, once per day for 7 consecutive days, followed by a 5 d withdrawal period. On d 13, all animals are challenged with saline. On day 1, 7, and 13, after 40-min treatment with Rotundine or saline, the mice are put into the test boxes and locomotor activity is monitored for 60 min[2].

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

REFERENCES

[1]. Wang JB, et al. l-tetrahydropalamatine: a potential new medication for the treatment of cocaine addiction. Future Med Chem. 2012 Feb;4(2):177-86.

[2]. Liu YL, et al. Effects of l-tetrahydropalmatine on locomotor sensitization to oxycodone in mice. Acta Pharmacol Sin. 2005 May;26(5):533-8.

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