8-OH-DPAT

Cat. No.: HY-112061

CAS No.: 78950-78-4

Molecular Formula: $C_{16}H_{25}NO$

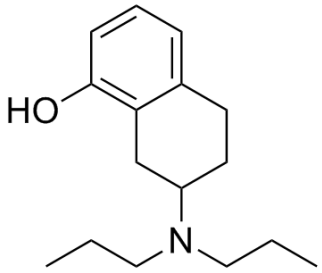
Molecular Weight: 247.38

Target: 5-HT Receptor

Pathway: GPCR/G Protein; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 155 mg/mL (626.57 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.0424 mL	20.2118 mL	40.4236 mL
5 mM	0.8085 mL	4.0424 mL	8.0847 mL
10 mM	0.4042 mL	2.0212 mL	4.0424 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 (10.11 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (10.11 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.11 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

8-OH-DPAT is a potent and selective 5-HT agonist, with a pIC_{50} of 8.19 for 5-HT1A and a K_i of 466 nM for 5-HT7; 8-OH-DPAT weakly binds to 5-HT1B (pIC_{50}, 5.42), 5-HT (pIC_{50} <5).

IC_{50} & Target

5-HT_{1A} Receptor	5-HT_7 Receptor
8.19 (pIC_{50})	466 nM (Ki)

In Vitro	8-OH-DPAT is a potent and selective 5-HT agonist, with a pIC_{50} of 8.19 for 5-HT1A; weakly binds to 5-HT1B (pIC_{50}, 5.42), 5-HT (pIC_{50} <5)[1]. 8-OH-DPAT has high affinity at 5-HT7 with a K_i of 466 nM, and does not bind to 5-HT6 or 5-HT4[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	8-OH-DPAT (1 mg/kg) normalizes hypolocomotion, significantly increases wakefulness and reduces the duration of REM sleep without effect on the duration of non-REM sleep in the dark period in orexin knockout (KO) mice. 8-OH-DPAT shows no obvious effect on wakefulness or the duration of either REM sleep or non-REM sleep in WT mice. 8-OH-DPAT (1 mg/kg, s.c.) activates 5-HT1A receptor in orexin knockout mice[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [3]	Mice[3] The locomotor activity of mice is measured by an infrared sensor placed in individual home cages. To compare the locomotor activity in the light and dark periods, locomotor activity is monitored at 30-min intervals starting at 8:00 a.m. and 8:00 p.m., respectively. To measure the effects of psychostimulants (8-OH-DPAT, 1, 3 mg/kg, s.c; etc.) on locomotor activity in the dark period, all drugs are administered at 8:00 p.m., and locomotor activity is then measured through 3 h[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. DEREK N. MIDDLEMISS, et al. 8-HYDROXY-2-(DI-n-PROPYLAMINO)-TETRALIN DISCRIMINATES BETWEEN SUBTYPES OF

[2]. Bard JA, et al. Cloning of a novel human serotonin receptor (5-HT7) positively linked to adenylate cyclase. J Biol Chem. 1993 Nov 5;268(31):23422-6.

[3]. Mori T, et al. Narcolepsy-like sleep disturbance in orexin knockout mice are normalized by the 5-HT1A receptor agonist 8-OH-DPAT. Psychopharmacology (Berl). 2016 Jun;233(12):2343-53.

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