(+)-PD 128907 hydrochloride

Cat. No.: HY-110000

CAS No.: 300576-59-4

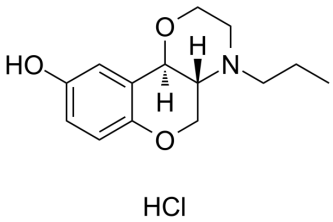
Molecular Formula: $C_{14}H_{20}ClNO_3$

Molecular Weight: 285.77

Target: Dopamine Receptor

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 : 20.83 mg/mL (72.89 mM; Need ultrasonic)
H_2O : 16.67 mg/mL (58.33 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.4993 mL	17.4966 mL	34.9932 mL
5 mM	0.6999 mL	3.4993 mL	6.9986 mL
10 mM	0.3499 mL	1.7497 mL	3.4993 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: ≥ 2.08 mg/mL (7.28 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (7.28 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (7.28 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

(+)-PD 128907 hydrochloride is a selective dopamine D_2/D_3 receptor agonist, with K_is of 1.7, 0.84 nM for human and rat D_3 receptors, 179, 770 n M for human and rat D_3 receptors, respectively.

IC_{50} & Target

Ki: 1.7 nM (human D_3 receptor), 0.84 nM (rat D_3 receptor), 179 nM (human D_2 receptor), 770 nM (rat D_2 receptor)[1][2].

In Vitro

(+)-PD 128907 displaced [^{3}H]spiperone binding from dopamine D_3 receptors (K_i human=1.7 nM and rat=0.84 nM) with >100-fold and 900-fold selectivity over the human (K_i=179 nM) and rat (K_i=770 nM) dopamine D_2 receptor[1][2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	(+)-PD 128907 significantly decreases dialysate DA levels in D_3 knock out mice. The IC_{25} values are 61 nM and 1327 nM, respectively, for wild type and D_3knock out mice. The ratio of the IC_{25} values shows that (+)-PD 128907 is 22 times more potent in decreasing dialysate DA levels in wild type as compared to mice lacking the D_3 receptor. The D3 agonist evokes a dose related decrease in dialysate DA in wild type mice. Post-hoc analysis shows that all doses tested (0.03, 0.1 and 0.3 mg/kg) significantly inhibit dialysate DA. The IC_{25} values are 0.05 and 0.44 mg/kg for wild type and knock out mice, respectively, indicating that systemically administered (+)-PD 128907 is 9 times more potent in decreasing dialysate DA in the ventral striatum of wild type as compared to D_3 knock out mice. Doses of 1 mg/kg or higher of (+)-PD 128907 markedly inhibits dialysate DA in both wild type and D_3 knock out mice[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Collins GT, et al. Dopamine agonist-induced yawning in rats: a dopamine D3 receptor-mediated behavior. J Pharmacol Exp Ther. 2005 Jul;314(1):310-9.

[2]. Bristow LJ, et al. The behavioural and neurochemical profile of the putative dopamine D3 receptor agonist, (+)-PD 128907, in the rat. Neuropharmacology. 1996 Mar;35(3):285-94.

[3]. Zapata A, et al. Selective D3 receptor agonist effects of (+)-PD 128907 on dialysate dopamine at low doses. Neuropharmacology. 2001 Sep;41(3):351-9.

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