Quinpirole hydrochloride

Cat. No.: HY-B1752A

CAS No.: 85798-08-9

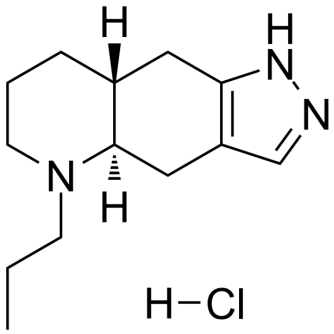
Molecular Formula: $C_{13}H_{22}ClN_3$

Molecular Weight: 255.79

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

H_2O : 50 mg/mL (195.47 mM; Need ultrasonic)
DMSO : 27.78 mg/mL (108.60 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.9095 mL	19.5473 mL	39.0946 mL
5 mM	0.7819 mL	3.9095 mL	7.8189 mL
10 mM	0.3909 mL	1.9547 mL	3.9095 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (390.95 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (8.13 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (8.13 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (8.13 mM); Clear solution

BIOLOGICAL ACTIVITY

Description Quinpirole hydrochloride (LY 171555 hydrochloride) is a high-affinity agonist of dopamine D2/D3 receptor.

IC_{50} & Target Dopamine D2/D3 receptor[1].

In Vivo DA content is left brain biased across groups, and although this asymmetry appears greater in saline controls than all drug-treated groups, there is not a significant interaction between Side and Group. When each side is considered separately it can

be seen that in the left brain structure, DA levels progressively decrease with chronic quinpirole treatment, with the QQ rats differing significantly from saline controls. In contrast, right cortical DA levels are only altered significantly (increased) by acute Quinpirole. It can be found that DOPAC levels are also left brain biased across groups. However, no significant Group or interaction effects are found. Rats receiving acute Quinpirole show a selective increase in DA content and decrease in turnover ratio, relative to either saline controls or the QS group. Sensitized (QQ) rats however, have elevated DOPAC levels in comparison to the acute quinpirole group. In striatum as well, all three measures of DA function differed significantly across groups (DA, $F_{3,33}$=6.27, P=0.0020; DOPAC, $F_{3,33}$=7.98, P=0.0004; turnover ratio, $F_{3,33}$=16.85, P<0.0001). In the acute quinpirole rats, both DOPAC and turnover ratio are significantly reduced relative to all other groups. In QQ rats, DOPAC levels are significantly greater than all other groups, while for turnover ratio, both chronic quinpirole groups were increased compared to both chronic saline groups[1].

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

PROTOCOL

Animal Administration [1]

Rat[1]

36 male Long-Evans rats are injected daily for 12 days with either saline or Quinpirole (Hydrochloride) (quinpirole HCl: 0.5 mg/kg, s.c., n=18/condition), and placed immediately in Omnitech activity monitors (60×60×40 cm) for 90 min. On the final test day, half the rats in each chronic condition received saline and half Quinpirole (n=9/group). The four groups therefore represented saline controls (SS), acute Quinpirole (SQ), sensitized Quinpirole (no drug)(QS) and sensitized Quinpirole (drug) (QQ). 30 min after the final injection, each rat is removed from the activity monitors to a nearby room and killed immediately by decapitation. This time point is chosen to dissociate the behavioural effects of quinpirole between groups, since acute quinpirole produces inhibition of activity at this time, while chronic quinpirole is associated with pronounced hyperlocomotion at 30 min[1].

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

CUSTOMER VALIDATION

- Environ Sci Technol. 2023 Sep 13.
- Cell Rep. 2023 Jul 14;42(7):112799.
- Br J Pharmacol. 2021 Apr 26.

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REFERENCES

[1]. Sullivan RM, et al. Effects of quinpirole on central dopamine systems in sensitized and non-sensitized rats. Neuroscience. 1998 Apr;83(3):781-9.

Caution: Product has not been fully validated for medical applications. For research use only.

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