LY3020371 hydrochloride

Cat. No.: HY-123820

CAS No.: 1377615-44-5

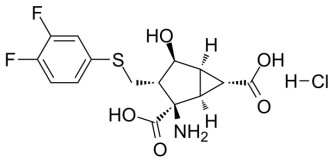
Molecular Formula: $C_{15}H_{16}ClF_2NO_5S$

Molecular Weight: 395.81

Target: mGluR

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 : 250 mg/mL (631.62 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.5265 mL	12.6323 mL	25.2646 mL
	5 mM	0.5053 mL	2.5265 mL	5.0529 mL
	10 mM	0.2526 mL	1.2632 mL	2.5265 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 (5.26 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.26 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.26 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

LY3020371 hydrochloride is a potent, selective metabotropic glutamate 2/3 receptor (mGlu2/3) antagonist with K_i of 5.3 and 2.5 nM, potently blocks cAMP formation with IC_{50} of 16.2 nM[1]. LY3020371 hydrochloride exerts an antidepressant-like signature in vivo[2].

IC_{50} & Target

mGluR2	mGluR3
5.3 nM (Ki)	2.5 nM (Ki)

In Vitro

LY3020371 hydrochloride (LY3020371.HCl) displaces binding of the mGlu2/3 agonist ligand [^{3}H]-459477 with high affinity (hmGlu2 K_i=5.26 nM; hmGlu3 K_i=2.50 nM)[1].

	LY3020371 hydrochloride (LY3020371.HCl) (0.1 nM-100 μM; 1 hours) potently blocks mGlu2/3 agonist (DCG-IV)-inhibited, forskolin-stimulated cAMP formation (IC_{50}=16.2 nM), an effect that was similarly observed in hmGlu3-expressing cells (IC_{50} =6.21 nM)[1]. LY3020371 hydrochloride (LY3020371.HCl) blocks agonist-suppressed spontaneous Ca^{2+} oscillations (IC_{50}=34 nM) and in an intact hippocampal slice preparation (IC_{50}=46 nM)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	LY3020371 hydrochloride (LY3020371.HCl) (Intravenous injection; 3-15 mg/kg) in rats leads to cerebrospinal fluid drug levels that are expected to effectively block mGlu2/3receptors[1]. LY3020371 hydrochloride (LY3020371) (intraperitoneal injection; 3 mg/kg, 10 mg/kg; 2 hours) has clear wake promoting effects, resulting in a large reduction in NREM sleep in the Wistar rats during the light phase[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Witkin JM, et al. In vitro pharmacological and rat pharmacokinetic characterization of LY3020371, a potent and selective mGlu2/3 receptor antagonist. Neuropharmacology. 2017 Mar 15;115:100-114.

[2]. Witkin JM, et al. Preclinical predictors that the orthosteric mGlu2/3 receptor antagonist LY3020371 will not engender ketamine-associated neurotoxic, motor, cognitive, subjective, or abuse-liability-related effects. Pharmacol Biochem Behav. 2017 Apr;155:43-55.

[3]. Wood CM, et al. Investigating the role of mGluR2 versus mGluR3 in antipsychotic-like effects, sleep-wake architecture and network oscillatory activity using novel Han Wistar rats lacking mGluR2 expression. Neuropharmacology. 2018 Sep 15;140:246-259.

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