Biperiden hydrochloride

Cat. No.: HY-13204

CAS No.: 1235-82-1

Molecular Formula: $C_{21}H_{30}ClNO$

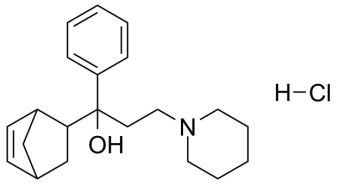
Molecular Weight: 347.92

Target: mAChR

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 mg/mL (57.48 mM; Need ultrasonic)

H_2O : 5 mg/mL (14.37 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8742 mL	14.3711 mL	28.7422 mL
	5 mM	0.5748 mL	2.8742 mL	5.7484 mL
	10 mM	0.2874 mL	1.4371 mL	2.8742 mL

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

BIOLOGICAL ACTIVITY

Description

Biperiden (KL 373) hydrochloride is a non-selective muscarinic receptor antagonist that competitively binds to M1 muscarinic receptors, thereby inhibiting acetylcholine and enhancing dopamine signaling in the central nervous system. Biperiden hydrochloride has the potential for the research of Parkinson's disease and other related psychiatric disorders[1] [2].

In Vitro

Biperiden hydrochloride (29.6 μg/ml, 72 hours) can significantly induce apoptosis and inhibit proliferation at high doses in human pancreatic ductal adenocarcinoma cells[1].

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

Cell Proliferation Assay[1]

Cell Line:	Panc-1, Panc-2 and BxPC3 human pancreatic ductal adenocarcinoma cells
Concentration:	29.6 μg/mL
Incubation Time:	72 hours

Result:	Inhibited cell proliferation at 72 hours significantly by reducing nuclear c-Rel translocation.

In Vivo

Biperiden hydrochloride (intraperitoneal injection, 10 mg/kg, everyday, 3 weeks) reduces tumor size by 83% in subcutaneous xenograft mouse using Panc-1 human pancreatic ductal adenocarcinoma cells[1].
Biperiden hydrochloride (intraperitoneal injection, 8 mg/kg, every 8 hours, 10 days) can reduce frequency of spontaneous seizures and extracellular hippocampal glutamate levels while cause a long-term decrease in hippocampal excitability[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Subcutaneous xenograft mouse using Panc-1 human pancreatic ductal adenocarcinoma cells[1]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection; everyday; 3 weeks
Result:	Tumor size reduced by 83%.

Animal Model:	Male Wistar rats (200-250 g)[2]
Dosage:	8 mg/kg
Administration:	Intraperitoneal injection; every 8 hours; 10 days
Result:	Reduced late seizures by about three times with no affecting emotional memory damage.

REFERENCES

[1]. Leonie Konczalla et al. Biperiden and mepazine effectively inhibit MALT1 activity and tumor growth in pancreatic cancer. Int J Cancer. 2020 Mar 15;146(6):1618-1630.

[2]. Simone Bittencourt, et al. Modification of the natural progression of epileptogenesis by means of biperiden in the pilocarpine model of epilepsy. Epilepsy Res. 2017 Dec;138:88-97. doi: 10.1016/j.eplepsyres.2017.10.019. Epub 2017 Oct 29.

[3]. Pehl C, et al. Effects of two anticholinergic drugs, trospium chloride and biperiden, on motility and evoked potentials of the oesophagus. Aliment Pharmacol Ther. 1998 Oct;12(10)

[4]. Kornhuber J, et al. Identification of novel functional inhibitors of acid sphingomyelinase. PLoS One. 2011;6(8)

[5]. Myhrer T, et al. Antiparkinson drugs used as prophylactics for nerve agents: studies of cognitive side effects in rats. Pharmacol Biochem Behav. 2008 Jun;89(4):633-8.

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