Fluphenazine dihydrochloride

Cat. No.: HY-A0081

CAS No.: 146-56-5

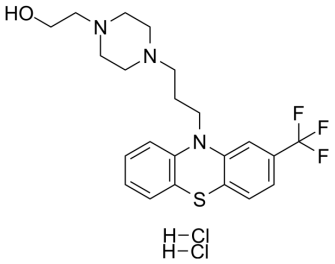
Molecular Formula: $C_{22}H_{28}Cl_2F_3N_3OS$

Molecular Weight: 510.44

Target: Dopamine Receptor; SARS-CoV; Sodium Channel

Pathway: GPCR/G Protein; Neuronal Signaling; Anti-infection; Membrane Transporter/Ion Channel

Storage: -20°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

H_2O : 100 mg/mL (195.91 mM; Need ultrasonic)
DMSO : ≥ 38 mg/mL (74.45 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.9591 mL	9.7955 mL	19.5909 mL
5 mM	0.3918 mL	1.9591 mL	3.9182 mL
10 mM	0.1959 mL	0.9795 mL	1.9591 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 (195.91 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 (4.07 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.07 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Fluphenazine dihydrochloride is a potent, orally active phenothiazine-based dopamine receptor antagonist. Fluphenazine dihydrochloride blocks neuronal voltage-gated sodium channels. Fluphenazine dihydrochloride acts primarily through antagonism of postsynaptic dopamine-2 receptors in mesolimbic, nigrostriatal, and tuberoinfundibular neural pathways. Fluphenazine dihydrochloride can antagonize Methylphenidate-induced stereotyped gnawing and inhibit climbing

	behaviour in mice. Fluphenazine dihydrochloride can be used for researching psychosis and painful peripheral neuropathy associated with diabetes and has potential to inhibit SARS-CoV-2[1][2][3][4][6].
In Vivo	Fluphenazine (1 mg/kg; IG, treated from day 6 to day 15 of gestation) dihydrochloride causes malformations in pregnant mice[5]. Fluphenazine (0.125-1 mg/kg; IP, single dosage) dihydrochloride antagonizes Methylphenidate-induced stereotyped gnawing; inhibits significantly climbing behaviour[6]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Davis JL, et al. Peripheral diabetic neuropathy treated with amitriptyline and fluphenazine. JAMA. 1977 Nov 21;238(21):2291-2.

[2]. Abdel-Hamid HA, et al. Teratogenic effect of diphenylhydantoin and/or fluphenazine in mice. J Appl Toxicol. 1996 May-Jun;16(3):221-5.

[3]. Langwiński R, Niedzielski J. Narcotic analgesics and stereotyped behaviour in mice. Naunyn Schmiedebergs Arch Pharmacol. 1980 Jul;312(3):225-7.

[4]. Zhou X, et al. The neuroleptic drug, fluphenazine, blocks neuronal voltage-gated sodium channels. Brain Res. 2006;1106(1):72-81.

[5]. Nazeam J, et al. Based on Principles and Insights of COVID-19 Epidemiology, Genome Sequencing, and Pathogenesis: Retrospective Analysis of Sinigrin and ProlixinRX (Fluphenazine) Provides Off-Label Drug Candidates. SLAS Discov. 2020 Dec;25(10):1123-1140.

[6]. Siragusa S, Bistas KG, Saadabadi A. Fluphenazine. 2022 May 8. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan.

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

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