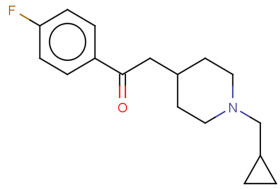
Data Sheet (Cat.No.T37074)

TargetMol

DuP 734

Chemical Properties



CAS No. : 135135-87-4

Formula: C17H23BrFNO

Molecular Weight: 356.279

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	DuP 734 is a potent and selective sigma receptor antagonist, functioning as a ligand for both sigma and 5-HT2 receptors, and exhibiting weak affinity towards D2 receptors. It possesses potential antipsychotic activity, potentially devoid of the motor side effects commonly observed with neuroleptics[1][2][3].
Targets(IC50)	Sigma receptor
In vivo	DuP 734 effectively inhibits mescaline-induced scratching (ED50=0.35 mg/kg, p.o.) and aggressive behavior (ED50=1.9 mg/kg, p.o.), albeit showing limited antagonism towards apomorphine (ED50=12 mg/kg, p.o.). Additionally, it significantly obstructs the interaction of [3H]DuP 734 and [3H](+)-SKF 10,047 with brain sigma receptors in vivo, displaying ID50 values of 0.02 and 0.07 mg/kg (0.07 and 0.25μmol/kg), respectively. Pharmacokinetic studies across mice, rats, beagle dogs, and cynomolgus monkeys reveal a high systemic plasma clearance (46 to 87 mL/min/kg) and a considerable volume of distribution (3.6 to 6.8 L/kg), with the terminal half-life spanning 50 to 83 minutes. Gastrointestinal absorption is notably swift in mice and rats, peaking at 5 and 20 minutes post-administration, respectively, while reaching peak plasma concentrations at 45 and 130 minutes in dogs and monkeys. The absolute bioavailability in mice varies between 29 to 46% across doses of 3.1 to 30.1 mg/kg, with marked increases in bioavailability noted at higher doses within narrow ranges across all studied species, indicating dose-dependent pharmacokinetics.

Solubility Information

Solubility	DMSO: 250 mg/mL (701.7 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 3.3 mg/mL (9.26 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.8068 mL	14.0339 mL	28.0678 mL
5 mM	0.5614 mL	2.8068 mL	5.6136 mL
10 mM	0.2807 mL	1.4034 mL	2.8068 mL
50 mM	0.0561 mL	0.2807 mL	0.5614 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

L Cook, et al. DuP 734 [1-(cyclopropylmethyl)-4-(2'(4''-fluorophenyl)-2'- Oxoethyl)piperidine HBr], a Potential Antipsychotic Agent: Preclinical Behavioral Effects. J Pharmacol Exp Ther. 1992 Dec;263(3):1159-66.
M Watanabe, et al. [3H]1-(cyclopropylmethyl)-4-(2-(4-fluorophenyl)-2-oxoethyl) Piperidine HBr (DuP 734). A Selective Ligand for Sigma Receptors in Mouse Brain in Vivo. J Pharmacol Exp Ther. 1993 Sep;266(3):1541-8.
R P Kapil, et al. Dose and Species Dependent Pharmacokinetics of a Novel Sigma Receptor Antagonist, DuP 734. Res Commun Mol Pathol Pharmacol. 1995 Apr;88(1):3-20.

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