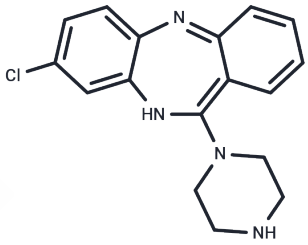
Data Sheet (Cat.No.T5158)

TargetMol

N-Desmethylclozapine

Chemical Properties



CAS No. : 6104-71-8

Formula: C17H17ClN4

Molecular Weight: 312.8

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	N-Desmethylclozapine (Desmethylclozapine) is an antagonist of serotonin (5-HT) receptor subtype 5-HT2C (IC50: 7.1 nM). It also is an antagonist at dopamine D4 receptors, an agonist at δ-opioid receptors.
Targets(IC50)	5-HT Receptor,Opioid Receptor,AChR,Dopamine Receptor,Drug Metabolite,Virus Protease
In vitro	N-desmethylclozapine antagonized 5-HT-stimulated phosphoinositide hydrolysis with IC50 values of 29.4 nM [1]. N-desmethylclozapine exhibited slight agonistic effects on the M1 mAChR and agonistic properties at the 5-HT1A receptor in the cerebral cortex and hippocampus. This compound also behaved as an agonist at the δ-opioid receptor in the cerebral cortex and the striatum [2]. Muscarinic agonist activity of N-desmethylclozapine was higher than that of clozapine, higher in excitatory neurons than in inhibitory neurons, sensitive to pirenzepine, and partially masked when co-applied with clozapine [3].
In vivo	NDMC (3-30mg/kg) decreased exploratory locomotor activity in a dose-dependent manner, and the reduced locomotor activity was significantly antagonized by scopolamine at doses of 0.1 and 0.3mg/kg. NDMC (10-30mg/kg) dose-dependently increased prepulse inhibition (PPI) in DBA/2J mice [4].
Animal Research	Exploratory locomotor activity was monitored as described previously. Animals were habituated to the experimental room for at least 60 min before testing. Oxotremorine (0.01, 0.03, 0.1 mg/kg, s.c.), NDMC (3, 10, 30 mg/kg, s.c.), xanomeline (0.3, 1, 3 mg/kg, s.c.), or scopolamine (0.1, 0.3, 1 mg/kg, s.c.) was administered. Scopolamine (0.1, 0.3 mg/kg, s.c.) was injected 30 min before the administration of test agents in antagonism studies. Animals were placed in plastic cages (22.5D×33.8 W×14.0H cm) immediately after the administration of test agents in the antagonism studies, and exploratory locomotor activity was measured during a 60 min observation period using an infrared motion detector system [4].

Solubility Information

Solubility	DMSO: 125 mg/mL (399.62 mM),Sonication is recommended. Ethanol: 30 mg/mL (95.91 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: 2 mg/mL (6.39 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	3.1969 mL	15.9847 mL	31.9693 mL
5 mM	0.6394 mL	3.1969 mL	6.3939 mL
10 mM	0.3197 mL	1.5985 mL	3.1969 mL
50 mM	0.0639 mL	0.3197 mL	0.6394 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

Kuoppamäki M, et al. Clozapine and N-desmethylclozapine are potent 5-HT1C receptor antagonists. Eur J Pharmacol. 1993 Apr 15;245(2):179-82.
Odagaki Y, et al. Comparative analysis of pharmacological properties of xanomeline and N-desmethylclozapine in rat brain membranes. J Psychopharmacol. 2016 Sep;30(9):896-912.
Sugawara Y, et al. Electrophysiological evidence showing muscarinic agonist-antagonist activities of N-desmethylclozapine using hippocampal excitatory and inhibitory neurons. Brain Res. 2016 Jul 1;1642:255-262.
Maehara S, et al. Behavioral effects of N-desmethylclozapine on locomotor activity and sensorimotor gating function in mice-Possible involvement of muscarinic receptors. Brain Res. 2011 Oct 18;1418:111-9.
Medigeshi GR, et al. N-Desmethylclozapine, Fluoxetine and Salmeterol inhibit post-entry stages of dengue virus life-cycle. Antimicrob Agents Chemother. 2016 Aug 29.