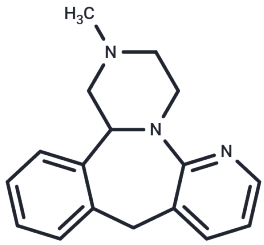
Data Sheet (Cat.No.T0137)

TargetMol

Mirtazapine

Chemical Properties



CAS No. : 85650-52-8

Formula: C17H19N3

Molecular Weight: 265.35

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	Mirtazapine (6-Azamianserin) is a tetracyclic antidepressant with a somewhat unique mechanism of action. Mirtazapine therapy can be associated with transient asymptomatic elevations in serum aminotransferase levels and has been linked to rare instances of clinically apparent acute liver injury.
Targets(IC50)	5-HT Receptor,Opioid Receptor,Adrenergic Receptor,Histamine Receptor,Dopamine Receptor
In vitro	Mirtazapine displays marked affinity for cloned, human alpha2A-adrenergic (AR) receptors at which it blocks noradrenaline (NA)-induced stimulation of guanosine-5'-O-(3-[35S]thio)-triphosphate ([35S]-GTPgammaS) binding. Mirtazapine shows high affinity for cloned, human serotonin (5-HT)2C receptors at which it abolishes 5-HT-induced phosphoinositide generation. Mirtazapine markedly elevates dialysate levels of NA and, in FCX, DA, whereas 5-HT is not affected.[1] Mirtazapine enhances the effectiveness of the electrical stimulation of the ascending 5-HT pathway by blocking both alpha-2 adrenergic auto- and heteroreceptors. Mirtazapine blocks the suppressant effect of microiontophoretically applied norepinephrine (NE) on the firing activity of CA3 dorsal hippocampus pyramidal neurons, indicating their antagonistic effects on postsynaptic alpha-2 adrenoceptors. [2]
In vivo	Mirtazapine (10-250 mg/kg i.v.) enhances dose-dependently the firing activity of the 5-HT neurons in naive rats, but not in 6-hydroxydopamine-pretreated rats. [2] Mirtazapine (5 mg/kg/day, s.c., using osmotic minipumps) increases the spontaneous firing activity of locus coeruleus noradrenaline (NA) neurons in male Sprague-Dawley rats. Mirtazapine antagonizes both the enhancing effect of a low dose (10 mg/kg, i.v.) and the reducing effect of a high dose (100 mg/kg, i.v.) of the alpha 2-adrenoceptor agonist clonidine on the effectiveness of the electrical stimulation of the ascending 5-HT pathway in suppressing the firing activity of dorsal hippocampus CA3 pyramidal neurons. [3] Mirtazapine (5 mg/kg s.c.) only slightly affects DOPAC and homovanillic acid levels in the striatum, hardly affects 5-HT release in freely moving rats, but clearly increased 5-hydroxyindole acetic acid. [4]

Solubility Information

Solubility	Ethanol: 53 mg/mL (199.74 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 62.5 mg/mL (235.54 mM),Sonication is recommended.

Solubility	(< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 6.25 mg/mL (23.55 mM),Solution. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.54 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	3.7686 mL	18.843 mL	37.6861 mL
5 mM	0.7537 mL	3.7686 mL	7.5372 mL
10 mM	0.3769 mL	1.8843 mL	3.7686 mL
50 mM	0.0754 mL	0.3769 mL	0.7537 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

Millan MJ, et al. Eur J Neurosci, 2000, 12(3), 1079-1095.
Garcia-Effron G, et al. J Antimicrob Chemother, 2004, 53(6), 1086-1089.
Haddjeri N, et al. Naunyn Schmiedebergs Arch Pharmacol, 1997, 355(1), 20-29.
de Boer TH, et al. J Pharmacol Exp Ther, 1996, 277(2), 852-860.