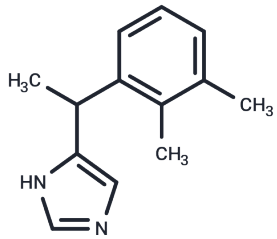
Data Sheet (Cat.No.T21492)

TargetMol

Medetomidine

Chemical Properties



CAS No. : 86347-14-0

Formula: C13H16N2

Molecular Weight: 200.28

Storage: Keep away from moisture
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	Medetomidine (MPV785 free base) is a selective and orally available α2-adrenoceptor agonist, Ki=1.08 nM, with sedative and analgesic effects and vasoconstrictive hypoxic side effects, and is commonly used in small animal anesthesia.
Targets(IC50)	Adrenergic Receptor
In vitro	Both enantiomers of Medetomidine (dex- and levoMedetomidine) inhibit cytochrome P450-dependent drug-metabolizing activity in rat and human liver microsomes(100 μg/kg ;from 17 to 23 min.; both enantiomers)[1]. In Rainbow trout(i.p. injection; <5μmol/kg) or water exposure (<50nM) caused a 2-7 fold increase in hepatic EROD activity[2].
In vivo	In rat models, Medetomidine exhibits dose-dependent sedative and analgesic effects. High doses (>100 μg/kg) can result in loss of righting reflex and hypothermia[3]. In anesthetized rats, Medetomidine induces transient hypotension and bradycardia. In denervated rats, it shows potent vasopressor activity (PD_{50} = 1.7 μg/kg) and suppresses sympathetic nerve activity (ID_{50} = 1.6 μg/kg)[3].

Solubility Information

Solubility	DMSO: 200 mg/mL (998.6 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble),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: 5 mg/mL (24.97 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	4.993 mL	24.965 mL	49.9301 mL
5 mM	0.9986 mL	4.993 mL	9.986 mL
10 mM	0.4993 mL	2.4965 mL	4.993 mL
50 mM	0.0999 mL	0.4993 mL	0.9986 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

Pelkonen O, Puurunen J, Arvela P, Lammintausta R. Comparative effects of medetomidine enantiomers on in vitro and in vivo microsomal drug metabolism. Pharmacol Toxicol. 1991 Sep;69(3):189-94.
Lennquist, A. (2016). Studies of fish responses to the antifoulant medetomidine. Ub.gu.se.
Savola JM, Ruskoaho H, Puurunen J, Salonen JS, Kärki NT. Evidence for medetomidine as a selective and potent agonist at alpha 2-adrenoreceptors. J Auton Pharmacol. 1986 Dec;6(4):275-84.

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