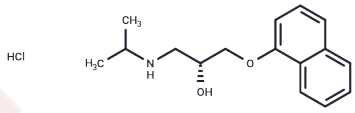
Data Sheet (Cat.No.T20898)

TargetMol

(R)-Propranolol hydrochloride

Chemical Properties



CAS No. :	13071-11-9
Formula:	C16H22ClNO2
Molecular Weight:	295.8
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	(R)-Propranolol hydrochloride (Dexpropranolol hydrochloride) is the less active enantiomer of the anti-adrenoceptor (β-adrenoceptor) antagonist propranolol. Propranolol is a nonselective β-adrenergic receptor (βAR) antagonist with a high affinity for β1AR and β2AR with Ki values of 1.8 nM and 0.8 nM, respectively.
Targets(IC50)	Adrenergic Receptor
In vivo	Both isomers of propranolol are capable of preventing adrenaline-induced cardiac arrhythmias in cats anaesthetized with halothane and reversing ventricular tachycardia caused by ouabain in anaesthetized cats and dogs, but the dose of (-)-propranolol is significantly smaller than that of (+)-propranolol ((R)-Propranolol) in both species[4]. Administration of 10 mg/kg (R)-Propranolol hydrochloride has no antagonistic activity in rats, the cardiac responses to isoprenaline of rats can be blocked by probably much less than 1/100th of that of the (-) isomer in this preparation[4].

Solubility Information

Solubility	H2O: 14.79 mg/mL (50 mM),Sonication is recommended. DMSO: 250 mg/mL (845.17 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: 10 mg/mL (33.81 mM),Solution. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (6.76 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	3.3807 mL	16.9033 mL	33.8066 mL
5 mM	0.6761 mL	3.3807 mL	6.7613 mL
10 mM	0.3381 mL	1.6903 mL	3.3807 mL
50 mM	0.0676 mL	0.3381 mL	0.6761 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

Cocker PJ, Lin MY, Tremblay M, Kaur S, Winstanley CA. The β-adrenoceptor blocker propranolol ameliorates compulsive-like gambling behaviour in a rodent slot machine task:implications for iatrogenic gambling disorder. Eur J Neurosci. 2018 Jul 17.

Bührer C, Erdeve Ö, Bassler D, Bar-Oz B. Oral propranolol for prevention of threshold retinopathy of prematurity (ROPROP):protocol of a randomised controlled trial. BMJ Open. 2018 Jul 6;8(7):e021749.

Zhu X, Guo X, Liu D, Gong Y, Sun J, Dong C. Promotion of Propranolol Delivery to Hemangiomas by Using Anti-VEGFR Antibody-Conjugated Poly(lactic-co-glycolic acid) Nanoparticles. J Biomed Nanotechnol. 2017 Dec 1;13(12):1694-1705.

AM, Cullum VA. The biological properties of the optical isomers of propranolol and their effects on cardiac arrhythmias. Br J Pharmacol. 1968 Sep;34(1):43-55.