Product Data Sheet

Product Name: (±)-4-hydroxy Propranolol (hydrochloride)
Cat. No.: GC16663

Chemical Properties

Cas. No.	14133-90-5		
Chemical Name	4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-1-naphthalenol, monohydrochloride		
SMILES	OC1=CC=C(OCC(O)CNC(C)C)C2=C1C=CC=C2.Cl		
Formula	$C_{16}H_{21}NO_3$ • HCl	M.Wt	311.8
Solubility	≤30mg/ml in ethanol;50mg/ml in DMSO;30mg/ml in dimethyl formamide	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Background

IC50: 1.1 μM: inhibits lipid peroxidation in endothelial cells.

(±)-4-hydroxy Propranolol, an active metabolite of propranolol, blocks β1- and β2-adrenergic receptors (β1-ARs, β2-ARs). Also, (±)-4-hydroxy propranolol has antioxidant properties at micromolar concentrations. β1- and β2-ARs, expressed in cardiac myocytes, mediate an increase in contractility by Gs-dependent coupling to adenylyl cyclase.

In vitro: Compared to the control, (±)-4-hydroxy propranolol potently blocked the lipid peroxidation in a concentration-dependent fashion in endothelial cells. When pretreated with (±)-4-hydroxy propranolol at 0.067 to 6.7 μM, the degrees of protection were increased against the glutathione loss in the endothelial cells. Additionally, (±)-4-hydroxy propranolol effectively preserved the loss of cell survival because of the radical stress [1].

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In vivo: Rats were injected intravenously with (±)-4-hydroxy propranolol into the femoral vein at 0.1 ml/100 g. (±)-4-hydroxy Propranolol induced an increase in heart rate in a dose-dependent manner in rats depleted of catecholamines, which suggested that (±)-4-hydroxy propranolol had intrinsic sympathomimetic activity. The response of (±)-4-hydroxy propranolol was inhibited when rats were pretreated with 0.5 mg/kg propranolol [2].

References:

[1]. Mak, I. Potent Antioxidant Properties of 4-Hydroxyl-propranolol. Journal of Pharmacology and Experimental Therapeutics. 2003; 308(1): 85-90.
[2]. FITZGERALD, J., & O'DONNELL, S. Pharmacology of 4-hydroxypropranolol, a metabolite of propranolol. British Journal of Pharmacology. 1971; 43(1): 222-235.

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