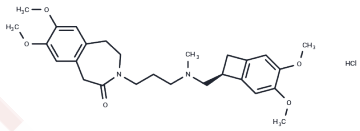
Data Sheet (Cat.No.T2535)

TargetMol

Ivabradine hydrochloride

Chemical Properties



CAS No. : 148849-67-6

Formula: C27H37ClN2O5

Molecular Weight: 505.05

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Ivabradine hydrochloride (S 16257-2) is a new If inhibitor (IC50: 2.9 μM). Ivabradine Hydrochloride is the hydrochloride salt form of ivabradine, an orally bioavailable, hyperpolarization-activated, cyclic nucleotide-gated (HCN) channel blocker, with negative chronotropic activity. Upon administration, ivabradine selectively binds to the intracellular portion of the HCN channel pore and blocks HCN channels in the pacemaker cells within the sinoatrial (SA) node. This inhibits the If (funny) pacemaker ion current, prevents the inward flow and intracellular accumulation of positively charged ions, reduces pacemaker activity and slows diastolic depolarization.
Targets(IC50)	HCN Channel,Adrenergic Receptor
In vivo	Ivabradine treatment (10 mg/kg/d) induces long-term HRR, and that improves diastolic LV function probably involving attenuated hypoxia, reduced remodeling, and/or preserved nitric oxide bioavailability, resulting from processes triggered early after HRR initiation: angiogenesis and/or preservation of endothelial nitric oxide synthase expression[1]. Ivabradine causes a sustained 15-20% heart rate reduction, but has no effect on blood pressure. While ivabradine has no effect on endothelial function and vascular reactive oxygen species production in angiotensin II-treated rats, it improves both parameters in ApoE knockout mice. Ivabradine treatment leads to an attenuation of angiotensin II signaling and increased the expression of telomere-stabilizing proteins in ApoE knockout mice, which may explain its beneficial effects on the vasculature. The absence of these protective ivabradine effects in angiotensin II-infused rats may relate to the treatment duration or the presence of arterial hypertension[2].

Solubility Information

Solubility	DMSO: 93 mg/mL (184.14 mM),Sonication is recommended. Ethanol: 93 mg/mL (184.14 mM),Sonication is recommended. H2O: 75 mg/mL (148.5 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.980 mL	9.900 mL	19.800 mL
5 mM	0.396 mL	1.980 mL	3.960 mL
10 mM	0.198 mL	0.990 mL	1.980 mL
50 mM	0.0396 mL	0.198 mL	0.396 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.

Reference

Thollon C, et al. Br J Pharmacol, 1994,112(1):37-42.