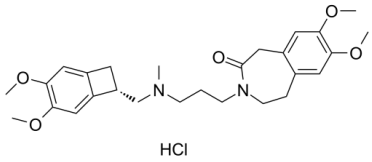
Data Sheet

Product Name:	Ivabradine (hydrochloride)
Cat. No.:	CS-1994
CAS No.:	148849-67-6
Molecular Formula:	C27H37ClN2O5
Molecular Weight:	505.05
Target:	Adrenergic Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Solubility:	DMSO : ≥ 51 mg/mL (100.98 mM)



BIOLOGICAL ACTIVITY:

Ivabradine hydrochloride is an orally bioavailable, hyperpolarization-activated, cyclic nucleotide-gated (**HCN**) channel blocker. **In Vivo:** Ivabradine hydrochloride 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 hydrochloride leads to 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 hydrochloride 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].

References:

[1]. Fang, Y., et al. Heart rate reduction induced by the if current inhibitor ivabradine improves diastolic function and attenuates cardiac tissue hypoxia. J Cardiovasc Pharmacol, 2012. 59(3): p. 260-7.

[2]. Kroller-Schon, S., et al. Differential effects of heart rate reduction with ivabradine in two models of endothelial dysfunction and oxidative stress. Basic Res Cardiol, 2011. 106(6): p. 1147-58.

CAIndexNames:

2H-3-Benzazepin-2-one, 3-[3-[[[(7S)-3,4-dimethoxybicyclo[4.2.0]octa-1,3,5-trien-7-yl]methyl]methylamino]propyl]-1,3,4,5-tetrahydro-7,8-dimethoxy-, hydrochloride (1:1)

SMILES:

O=C1N(CCCN(C[C@@H]2C3=CC(OC)=C(OC)C=C3C2)C)CCC4=CC(OC)=C(OC)C=C4C1.Cl

Caution: Product has not been fully validated for medical applications. For research use only.

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