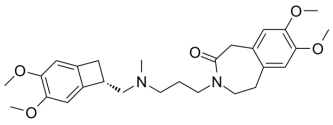
Ivabradine

Cat. No.:	HY-B0162
CAS No.:	155974-00-8
Molecular Formula:	$C_{27}H_{36}N_2O_5$
Molecular Weight:	468.59
Target:	HCN Channel
Pathway:	Membrane Transporter/Ion Channel
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Ivabradine is a potent and orally active HCN (hyperpolarization-activated cyclic nucleotide-gated) channel blocker that inhibits the cardiac pacemaker current (If). Ivabradine reduces dose-dependently heart rate without modification of blood pressure. Ivabradine shows anticonvulsant, anti-ischaemic and anti-anginal activity[1][2][3][4].

In Vivo

Ivabradine (1, 10, 20 mg/kg; i.p.) shows anticonvulsant and neuroprotective action in mice[3].
Ivabradine (5, 10, 20 mg/kg;p.o.; daily for 1 weeks) lowers heart rate in mice with enhanced sympathoadrenergic activities[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	25-30 g, 6 weeks male Swiss mice[3]
Dosage:	1, 10, 20 mg/kg
Administration:	I.p.; for 3 days
Result:	Attenuated PTZ- and PICRO-induced seizures while presented an antioxidant effect in allbrain areas studied, and reduced cleaved caspase-3 expression in the CA1 and DG region of PICRO- and PTZ-treated mice, respectively.

Animal Model:	3-4 months transgenic (TG) mice with cardiac-restricted overexpression of b2AR[4]
Dosage:	5, 10, 20 mg/kg
Administration:	P.o; daily for 1 weeks
Result:	Reduced the maximal HR increase in response to the b-agonist isoproterenol, without modifying the response of contractile parameters at 10 mg/kg.

CUSTOMER VALIDATION

- J Cell Physiol. 2019 Feb;234(2):1925-1936.

- Front Pharmacol. 2021 Jun 22;12:696635.

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REFERENCES

[1]. Tardif JC, et al. Efficacy of ivabradine, a new selective I(f) inhibitor, compared with atenolol in patients with chronic stable angina. Eur Heart J. 2005 Dec;26(23):2529-36.

[2]. Mulder P, et al. Heart rate slowing for myocardial dysfunction/heart failure. Adv Cardiol. 2006;43:97-105.

[3]. Cavalcante TMB, et al. Ivabradine possesses anticonvulsant and neuroprotective action in mice. Biomed Pharmacother. 2019 Jan;109:2499-2512.

[4]. Du XJ, et al. I(f) channel inhibitor ivabradine lowers heart rate in mice with enhanced sympathoadrenergic activities. Br J Pharmacol. 2004 May;142(1):107-12.

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