Ranolazine dihydrochloride

Cat. No.: HY-17401

CAS No.: 95635-56-6

Molecular Formula: $C_{24}H_{35}Cl_2N_3O_4$

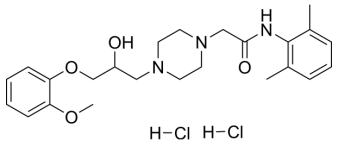
Molecular Weight: 500.46

Target: Calcium Channel; Sodium Channel; Autophagy

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Autophagy

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (99.91 mM)

H_2O : ≥ 50 mg/mL (99.91 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9982 mL	9.9908 mL	19.9816 mL
	5 mM	0.3996 mL	1.9982 mL	3.9963 mL
	10 mM	0.1998 mL	0.9991 mL	1.9982 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (199.82 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Ranolazine dihydrochloride (CVT 303 dihydrochloride) is an anti-angina agent that achieves its effects by inhibiting the late phase of inward sodium current (I_{Na} and I_{Kr} with IC_{50} values of 6 μM and 12 μM, respectively) without affecting heart rate or blood pressure (BP)[1][2]. Ranolazine dihydrochloride is also a partial fatty acid oxidation inhibitor[3].

IC_{50} & Target

IC50: 6 μM (I_{Na}), 12 μM (I_{Kr})[1]

In Vivo

Ranolazine (Bolus injection 10 mg/kg and infusion 9.6 mg/kg/h; bolus injection; for 145 minutes; male Wistar rats) treatment significantly reduces infarct size and cardiac troponin T release in rats subjected to left anterior descending coronary artery occlusion-reperfusion[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Wistar rats (240-350 g)[3]
Dosage:	Bolus injection 10 mg/kg and infusion (9.6 mg/kg/h)
Administration:	Bolus injection; for 145 minutes
Result:	Significantly reduced infarct size and cardiac troponin T release in rats subjected to left anterior descending coronary artery occlusion-reperfusion.

CUSTOMER VALIDATION

- Theranostics. 2018 Oct 29;8(19):5452-5468.
- J Invest Dermatol. 2022 Sep 1;S0022-202X(22)01890-5.
- Philos Trans R Soc Lond B Biol Sci. 2023 Jun 19;378(1879):20220163.

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REFERENCES

[1]. Keating GM. Ranolazine: A Review of Its Use as Add-On Therapy in Patients with Chronic Stable Angina Pectoris. Drugs. 2013 Jan;73(1):55-73.

[2]. Wang WQ, Robertson C, Dhalla AK, Belardinelli L. Antitorsadogenic effects of ({+/-})-N-(2,6-dimethyl-phenyl)-(4[2-hydroxy-3-(2-methoxyphenoxy)propyl]-1-piperazine (ranolazine) in anesthetized rabbits. J Pharmacol Exp Ther. 2008 Jun;325(3):875-81. doi: 10.1124/jpet.108.137729. Epub 2008 Mar 5.

[3]. Zacharowski K, Blackburn B, Thiemermann C. Ranolazine, a partial fatty acid oxidation inhibitor, reduces myocardial infarct size and cardiac troponin T release in the rat. Eur J Pharmacol. 2001 Apr 20;418(1-2):105-10.

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