Product data sheet

MedKoo Cat#: 318652	
Name: Ranolazine HCl	
CAS: 73851-70-4	
Chemical Formula: $C_{24}H_{35}Cl_2N_3O_4$	
Molecular Weight: 500.46	

Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

Product description:

Ranolazine is an anti-ischemic compound, which inhibits late sodium current that results in a reduction of Na+ dependent Ca2+ overload. Ranolazine HCl is a salt form of Ranolazine.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	20	39.96
DMSO	20	39.96
Water	20	39.96

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.00 mL	9.99 mL	19.98 mL
5 mM	0.40 mL	2.00 mL	4.00 mL
10 mM	0.20 mL	1.00 mL	2.00 mL
50 mM	0.04 mL	0.20 mL	0.40 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under se ction of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. da Silva MV, Santos-Miranda A, Joviano-Santos JV, Souza DS, Marques LP, Sarmento JO, Beserra SS, Roman-Campos D. The insecticide β-Cyfluthrin induces acute arrhythmic cardiotoxicity through interaction with NaV1.5 and ranolazine reverses the phenotype. Clin Sci (Lond). 2022 Mar 18;136(5):329-343. doi: 10.1042/CS20211151. PMID: 35190819.

2. Chen BS, Lo YC, Peng H, Hsu TI, Wu SN. Effects of ranolazine, a novel anti-anginal drug, on ion currents and membrane potential in pituitary tumor GH(3) cells and NG108-15 neuronal cells. J Pharmacol Sci. 2009 Jul;110(3):295-305. doi: 10.1254/jphs.09018fp. PMID: 19609066.

In vivo study

1. Han QJ, Forfia P, Vaidya A, Ramani G, deKemp RA, Mach RH, Mankoff DA, Bravo PE, DiCarli M, Chan SY, Waxman AB, Han Y. Effects of ranolazine on right ventricular function, fluid dynamics, and metabolism in patients with precapillary pulmonary hypertension: insights from a longitudinal, randomized, double-blinded, placebo controlled, multicenter study. Front Cardiovasc Med. 2023 Jun 13;10:1118796. doi: 10.3389/fcvm.2023.1118796. PMID: 37383703; PMCID: PMC10293744.

2. Souza DS, Marques LP, Costa AD, Cruz JS, Rhana P, Santos-Miranda A, Joviano-Santos JV, Durço AO, Vasconcelos CML, Roman-Campos D. Experimental hypothyroidism induces cardiac arrhythmias and ranolazine reverts and prevents the phenotype. Life Sci. 2022 Nov 1;308:120945. doi: 10.1016/j.lfs.2022.120945. Epub 2022 Sep 9. PMID: 36096245.

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7. Bioactivity

Biological target:

Ranolazine dihydrochloride is an antianginal agent with antiarrhythmic properties that acts as a partial fatty acid oxidation inhibitor. Activates pyruvate dehydrogenase in ischemic myocytes to promote glucose oxidation, switching substrate utilization from fatty acids to glucose. Also shown to inhibit late INa and IKr currents.

In vitro activity

This study suggests that ranolazine could block multiple ion currents such as I(Na) and I(K(IR)) and suggests that these actions may contribute to some of the functional activities of neurons and endocrine or neuroendocrine cells in vivo.

Reference: J Pharmacol Sci. 2009 Jul;110(3):295-305. https://pubmed.ncbi.nlm.nih.gov/19609066/

In vivo activity

This study found that animals with hypothyroidism have increased susceptibility to developing arrhythmia.Ranolazine is able to correct the arrhythmic phenotype.

Reference: Life Sci. 2022 Nov 1;308:120945. https://pubmed.ncbi.nlm.nih.gov/36096245/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.