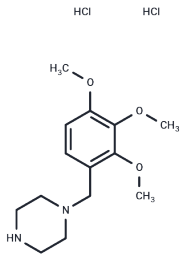
Data Sheet (Cat.No.T0988)

TargetMol

Trimetazidine dihydrochloride

Chemical Properties



CAS No. : 13171-25-0

Formula: C14H24Cl2N2O3

Molecular Weight: 339.258

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Trimetazidine dihydrochloride (Vastarel F) can improve myocardial glucose utilization by inhibiting fatty acid metabolism. Trimetazidine is the first cytoprotective anti-ischemic agent, also used as a vasodilator in ischemic heart disease or angina.
Targets(IC50)	Autophagy,Fatty Acid Synthase
In vitro	Trimetazidine up-regulates miR-21 expression, then miR-21 targets PTEN increasing the PI3K pathway and finally the activation of this pathway counteracts the apoptotic effect of hypoxia/reperfusion[3].
In vivo	The administration of TMZ reduces myocardial infarction size in WT C57BL/6J hearts. Both AMPK and ERK signaling pathways mediate the cardioprotection of TMZ against ischemic injury. Trimetazidine Shifts Metabolism from Fatty Acid Oxidation to Glucose Oxidation and improves Contractile Functions of Cardiomyocytes during Hypoxia[2].
Cell Research	The H9C2 cells are randomly assigned into three groups: Sham group, in which the cells are treated with 0μM TMZ for 48 h and then cultured under normal oxygenation conditions (5% CO2, and 95% air); H/R group, in which cells are treated with 0 μM TMZ for 48 h and then cultured under H/R conditions; and H/R+TMZ group, in which cells are treated with 10 μM TMZ for 48 h and then subjected to H/R treatment. (Only for Reference)

Solubility Information

Solubility	DMSO: 65 mg/mL (191.59 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (5.9 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.9476 mL	14.738 mL	29.4759 mL
5 mM	0.5895 mL	2.9476 mL	5.8952 mL
10 mM	0.2948 mL	1.4738 mL	2.9476 mL
50 mM	0.059 mL	0.2948 mL	0.5895 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Kantor PF, et al. Circ Res. 2000, 86(5):580-588.
Chen B, Huang Y, He S, et al.N6-methyladenosine modification in 18S rRNA promotes tumorigenesis and chemoresistance via HSF4b/HSP90B1/mutant p53 axis.Cell Chemical Biology.2023, 30(2): 144-158. e10.
Liu Z, et al. Metabolism. 2016, 65(3):122-130.
Yang Q, et al. Int J Clin Exp Pathol. 2015, 8(4):3735-3741.

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