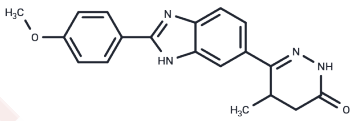
Data Sheet (Cat.No.T1708)

TargetMol

Pimobendan

Chemical Properties



CAS No. : 74150-27-9

Formula: C19H18N4O2

Molecular Weight: 334.37

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	Pimobendan (UD-CG 115 BS) is a selective inhibitor of PDE3 (IC50: 0.32 μM).
Targets(IC50)	PDE
In vitro	Compared to the control group, Pimobendan (1 mg/kg) significantly reduced the permeability of cardiomyocytes and also decreased the levels of TNF-α and IL-1β within the chamber without affecting myocardial nerves, heart weight, and body weight. In a mouse model of EMC virus-induced myocarditis, Pimobendan contributed to an extension of lifespan. The final survival rate was significantly increased from 33.6% (control group) to 53.3% (0.1 mg/kg) or 66.7% (1 mg/kg). Additionally, Pimobendan inhibited the expression of inducible nitric oxide synthase genes in the heart, thereby reducing the content of nitric oxide within the heart.
In vivo	When administered to human atrial cells, Pimobendan (100 μM) increased the L-type calcium current by 250.4% (EC50: 1.13 μM). Its effect on rabbit atrial cells was significantly lower, resulting in a 67.4% increase in ICa(L). Pimobendan exhibits selective inhibitory action on isolated PDE III in guinea pig myocardium (IC50: 0.32 μM), with much higher IC50s for PDE I and PDE II (>30 μM). It also inhibits cAMP-PDE III activity (IC50: 2.4 μM) and induces a positive inotropic effect on isolated guinea pig papillary muscles (EC50: 6.0 μM), partially due to its selective inhibition of myocardial PDE III.

Solubility Information

Solubility	DMSO: 55 mg/mL (164.49 mM),Sonication is recommended. Ethanol: 5 mg/mL (14.95 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), (< 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 (5.98 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	2.9907 mL	14.9535 mL	29.907 mL
5 mM	0.5981 mL	2.9907 mL	5.9814 mL
10 mM	0.2991 mL	1.4953 mL	2.9907 mL
50 mM	0.0598 mL	0.2991 mL	0.5981 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

Beier N, et al. J Cardiovasc Pharmacol, 1991, 18(1), 17-27.
Brunkhorst D, et al. Naunyn Schmiedebergs Arch Pharmacol, 1989, 339(5), 575-583.
Kajimoto K, et al. Br J Pharmacol, 1997, 121(8), 1549-1556.
Iwasaki A, J. Am Coll Cardiol, 1999, 33(5), 1400-1407.