Product Data Sheet

Product Name: Pimobendan hydrochloride
Cat. No.: GC17422

Chemical Properties

Cas. No.	77469-98-8		
Chemical Name	3-[2-(4-methoxyphenyl)-3H-benzimidazol-5-yl]-4-methyl-4,5-dihydro-1H-pyridazin-6-one;hydrochloride		
SMILES	CC1CC(=O)NN=C1C2=CC3=C(C=C2)N=C(N3)C4=CC=C(C=C4)OC.Cl		
Formula	$C_{19}H_{19}ClN_4O_2$	M.Wt	370.83
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Pimobendan hydrochloride		

Protocol

Animal experiment:

Mice[2]Since, in this model, most mice die of congestive heart failure within 14 days after EMC virus inoculation (21), the survival was observed up to 14 days in this study. Pimobendan was administered in doses of 0.1 mg/kg or 1 mg/kg daily for 14 days from the day of EMC virus inoculation while control mice received vehicles only. Thirty mice were randomly assigned to each group[2].

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References:

[1]. Kajimoto K, et al. Contribution of phosphodiesterase isozymes to the regulation of the L-type calcium current in human cardiac myocytes. Br J Pharmacol. 1997 Aug;121(8):1549-56.
[2]. Iwasaki A, et al. Pimobendan inhibits the production of proinflammatory cytokines and gene expression of inducible nitric oxide synthase in a murine model of viral myocarditis. J Am Coll Cardiol. 1999 Apr;33(5):1400-7.

Background

Pimobendan (hydrochloride) (UD-CG115 (hydrochloride)) is a selective inhibitor of PDE3 with IC50 of 0.32 μM.

Pimobendan (UD-CG115) exhibits selective inhibition of PDE III isolated from guinea pig cardiac muscle with IC50 of 0.32 uM compared to the inhibition of PDE I and PDE II (IC50 >30 μM). In human atrial cells, 100 μM Pimobendan (UD-CG115) significantly increases the L-type calcium current (ICa(L)) (evoked by depolarization to +10 mV from a holding potential of -40 mV) by 250.4% with the half-maximal stimulation (EC50) of 1.13 μM. In rabbit atrial cells, Pimobendan (UD-CG115) increases ICa(L) at +10 mV by 67.4.%, which is significantly lower than that obtained in human atrial cells.

Pimobendan (UD-CG115) shows a beneficial effect on survival in the murine model of EMC virus-induced myocarditis. Administration of Pimobendan (UD-CG115) significantly increases the final survival rate from 33.6% (control) to 53.3% (0.1 mg/kg) or 66.7% (1

mg/kg). Pimobendan (UD-CG115) (1 mg/kg) also significantly reduces myocardial cellular infiltration, the level of intracardiac tumor necrosis factor (TNF)-α and interleukin (IL)-1β compared with the control group, which shows no effect on myocardial necrosis, heart weight and body weight. Pimobendan (UD-CG115) suppresses expression of the intracardiac iNOS gene , causing reduction of intracardiac NO production[2].

References:

[1]. Kajimoto K, et al. Contribution of phosphodiesterase isozymes to the regulation of the L-type calcium current in human cardiac myocytes. Br J Pharmacol. 1997 Aug;121(8):1549-56.

[2]. Iwasaki A, et al. Pimobendan inhibits the production of proinflammatory cytokines and gene expression of inducible nitric oxide synthase in a murine model of viral myocarditis. J Am Coll Cardiol. 1999 Apr;33(5):1400-7.