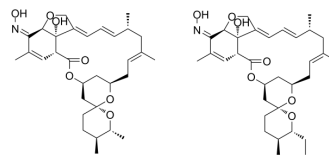


Milbemycin oxime

Cat. No.:	HY-B0778		
CAS No.:	129496-10-2		
Molecular Formula:	C ₆₃ H ₈₈ N ₂ O ₁₄		
Molecular Weight:	1097.38		
Target:	Parasite; Antibiotic		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (91.13 mM)
 H₂O : < 0.1 mg/mL (insoluble)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	0.9113 mL	4.5563 mL	9.1126 mL
	5 mM	0.1823 mL	0.9113 mL	1.8225 mL
	10 mM	0.0911 mL	0.4556 mL	0.9113 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: 2.5 mg/mL (2.28 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 2.08 mg/mL (1.90 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (1.90 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Milbemycin oxime is an orally active macrolide with broad-spectrum antiparasitic activity. Milbemycin oxime is a mixture of oximes consisting of oxime derivatives corresponding to milbemycin A4 and A3. Milbemycin oxime binds to glutamate-gated chloride channels and has inhibitory potency against intestinal nematodes and lung/heart worms^{[1][2][3]}.

IC₅₀ & Target

Macrolide

In Vivo

Milbemycin oxime (0.5 mg/kg, p.o.) and Afoxolaner (2.5 mg/kg, p.o.) prevents *Angiostrongylus vasorum* infection in dogs^[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Angiostrongylus vasorum infected dogs ^[3]
Dosage:	0.5 g, 1 g, and 2 g containing 9.375 mg + 1.875 mg, 18.75 mg + 3.75 mg, and 37.5 mg + 7.5 mg .
Administration:	p.o., on study days 0, 28, 56 and 84 with a combination of Afoxolaner plus Milbemycin oxime chewable tablets.
Result:	Reduced the geometric mean worm count and geometric mean faecal larval counts in the treated group.

REFERENCES

- [1]. Lebon W, et al. Monthly administrations of milbemycin oxime plus afoxolaner chewable tablets to prevent *Angiostrongylus vasorum* infection in dogs. *Parasit Vectors*. 2016 Sep 2;9(1):485.
- [2]. Valentina M Merola, et al. Toxicology of avermectins and milbemycins (macrocyclic lactones) and the role of P-glycoprotein in dogs and cats. *Vet Clin North Am Small Anim Pract*. 2012 Mar;42(2):313-33, vii.
- [3]. Dejan Cvejic, et al. Efficacy of a single dose of milbemycin oxime/praziquantel combination tablets, Milpro[®], against adult *Echinococcus multilocularis* in dogs and both adult and immature *E. multilocularis* in young cats. *Parasitol Res*. 2016 Mar;115(3):1195-202.

Caution: Product has not been fully validated for medical applications. For research use only.

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