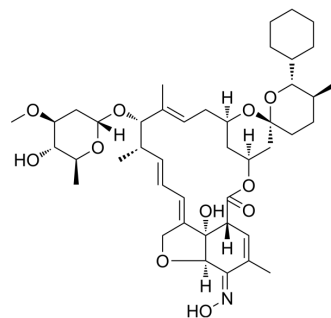


## Selamectin

<b>Cat. No.:</b>	HY-107212		
<b>CAS No.:</b>	220119-17-5		
<b>Molecular Formula:</b>	C <sub>43</sub> H <sub>63</sub> NO <sub>11</sub>		
<b>Molecular Weight:</b>	769.96		
<b>Target:</b>	Parasite; Chloride Channel; P-glycoprotein; Bacterial		
<b>Pathway:</b>	Anti-infection; Membrane Transporter/Ion Channel		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 100 mg/mL (129.88 mM)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	1.2988 mL	6.4938 mL	12.9877 mL
	5 mM	0.2598 mL	1.2988 mL	2.5975 mL
	10 mM	0.1299 mL	0.6494 mL	1.2988 mL

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

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
 Solubility: ≥ 2.5 mg/mL (3.25 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: 2.5 mg/mL (3.25 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
 Solubility: ≥ 2.5 mg/mL (3.25 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Selamectin, a semi-synthetic macrocyclic lactone, is a potent parasiticide and anthelmintic. Selamectin activates glutamate-gated chloride channels in neurons and pharyngeal muscles to prevent heartworm, *Lymphatic filariae*, and nematode infection. Selamectin is also a potent P-glycoprotein substrate and a P-glycoprotein inhibitor with an IC<sub>50</sub> of 120 nM<sup>[1][2]</sup>.

#### In Vitro

The transport of radiolabelled Selamectin through Caco-2 monolayers shows that Selamectin is P-glycoprotein (P-gp)

substrates with a secretory/absorptive ratio of 4.7. Selamectin inhibits the efflux of Rh-123 from peripheral blood lymphocytes (PBL) and the concentration of inhibition is similar to that of Verapamil<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

#### In Vivo

A single administration of 6 mg/kg topical Selamectin given every two months could effectively prevent *B. malayi* infection in cats. Application of topical Selamectin twice a year could block circulating microfilariae<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

#### Animal Administration <sup>[1]</sup>

The cats are weighed on Days -2, 29 and 58 to calculate the dosing. Cats in group 1 (control group) remain untreated. On Day 0, the cats in group 3 are treated with fluralaner at the minimum recommending label dose of 40.0 mg per kg body weight. On Days 0, 30 and 60, the cats in group 2 are treated with the new spot-on formulation at the minimum recommending label dose of 1.0 mg/kg sarolaner and 6.0 mg/kg Selamectin. The cats are observed at different time points after treatment for possible adverse reactions to treatment. On Day 0, administration site observations are performed on all cats 30 min ( $\pm 5$  min), 3 h ( $\pm 15$  min) and 24 h ( $\pm 1$  h) and again on Days 3 and 5 after treatment<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## REFERENCES

- [1]. Patsharaporn T Sarasombath, et al. First study of topical selamectin efficacy for treating cats naturally infected with *Brugia malayi* and *Brugia pahangi* under field conditions. *Parasitol Res.* 2019 Apr;118(4):1289-1297.
- [2]. J Griffin, et al. Selamectin is a potent substrate and inhibitor of human and canine P-glycoprotein. *J Vet Pharmacol Ther.* 2005 Jun;28(3):257-65.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA