

Catalog # 10-5257

Milbemectin

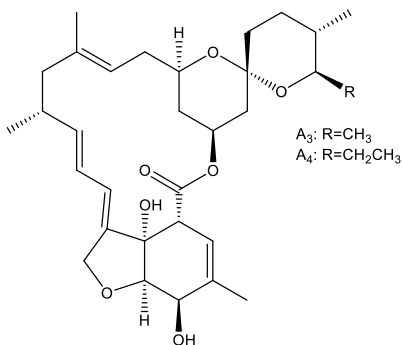
CAS# 1799297-76-9

Milbemectin is a mixture of Milbemycin A₃ (~30%) and Milbemycin A₄ (~70%)

Milbemycin A₃: (6R,25R)-5-O-demethyl-28-deoxy-6,28-epoxy-25-methyl-milbemycin B

Milbemycin A₄: (6R,25R)-5-O-demethyl-28-deoxy-6,28-epoxy-25-ethyl-milbemycin B

Lot # X108117



An allosteric agonist at the *Drosophila* RDL GABA receptor.^{1,2} Also acts as an agonist at glutamate-gated chloride channels in insects.³ Mutations (specifically a G326E substitution) in the glutamate-gated chloride channel 3 (GluCl3) in phytophagous mites abolishes agonist activity resulting in resistance.⁴ Commercially used as an acaricide.

- 1) Nakao *et al.* (2015), *Comparison between the modes of action of novel meta-diamide and macrocyclic lactone insecticides on the RDL GABA receptor*; Pestic. Biochem. Physiol., **120** 101
- 2) Casida and Durkin (2015), *Novel GABA receptor pesticide targets*; Pestic. Biochem. Physiol., **121** 22
- 3) Wolstenholme and Rogers (2005), *Glutamate-gated chloride channels and the mode of action of the avermectin/milbemycin anthelmintics*; Parasitology, **131 Suppl. S85**
- 4) Mermans *et al.* (2017), *A G326E substitution in the glutamate-gated chloride channel 3 (GluCl3) of the two-spotted spider mite Tetranychus urticae abolishes the agnostic activity of macrocyclic lactones*; Pest. Manag. Sci. **73** 2413

PHYSICAL DATA

Molecular Weight:	542.71 (for A ₄)
Molecular Formula:	C ₃₂ H ₄₆ O ₇ (for A ₄)
Purity:	>98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (20 mg/ml); ethanol (40 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied desiccated at -20°C for up to 2 years from the date of purchase. Solutions in DMSO or ethanol may be stored at -20°C for up to 3 months.

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