

PRODUCT INFORMATION



Milbemectin

Item No. 22003

CAS Registry No.: 1799297-76-9
Formal Name: **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

Synonym: Milbemycin A₃ (~30%) and Milbemycin A₄ (~70%) Mixture

MF: C₃₁H₄₄O₇ (A₃) and C₃₂H₄₆O₇ (A₄)
Purity: ≥95% (mixture)

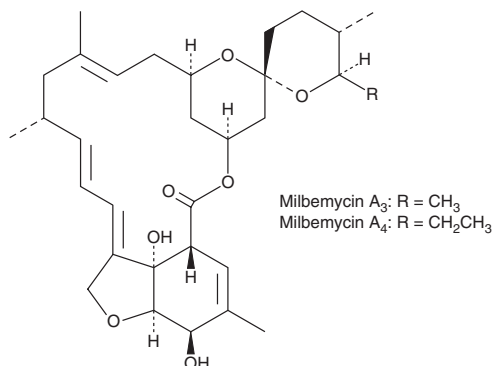
Supplied as: A solid

Storage: -20°C

Stability: ≥4 years

Item Origin: Semi-synthetic; Bacterium/*Streptomyces hygroscopicus*

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.



Laboratory Procedures

Milbemectin is supplied as a solid. A stock solution may be made by dissolving the milbemectin in the solvent of choice, which should be purged with an inert gas. Milbemectin is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide.

Description

Milbemectin is a mixture of milbemycin A₃ (30%; Item No. 18360) and milbemycin A₄ (70%; Item No. 17155) that has acaricidal and nematocidal activity against adult spider mites, spider mite eggs, and *C. elegans* with IC₅₀ values of 5.3, 41.1, and 9.5 µg/ml, respectively.¹ It acts as an allosteric agonist of the *Drosophila* RDL GABA receptor.² It is also effective against the pinewood nematode, *B. xylophilus* with an LC₂₀ of 0.0781 mg/liter.³

References

1. Yang, L.Y., Wang, J.D., Zhang, J., et al. New nemadectin congeners with acaricidal and nematocidal activity from *Streptomyces microflavus* neau3 Y-3. *Bioorg. Med. Chem. Lett.* **23**(20), 5710-5713 (2013).
2. Nakao, T., Banba, S., and Hirase, K. Comparison between the modes of action of novel meta-diamide and macrocyclic lactone insecticides on the RDL GABA receptor. *Pestic. Biochem. Physiol.* **120**, 101-108 (2015).
3. Bi, Z., Gong, Y., Huang, X., et al. Efficacy of four nematicides against the reproduction and development of pinewood nematode, *Bursaphelenchus xylophilus*. *J. Nematol.* **47**(2), 126-32 (2015).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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