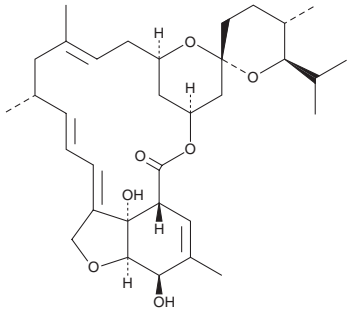
PRODUCT INFORMATION

Milbemycin D

Item No. 18766

CAS Registry No.:	77855-81-3
Formal Name:	5-O-demethyl-28-deoxy-6R,28-epoxy-25R-(1-methylethyl)-milbemycin B
Synonym:	Antibiotic B 41D
MF:	$C_{33}H_{48}O_7$
FW:	556.7
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥2 years
Item Origin:	Bacterium/*Streptomyces hygroscopicus*



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

Laboratory Procedures

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

Description

Milbemycin D is an insecticidal and anthelmintic antibiotic originally isolated from *S. hygroscopicus*.[1] It is toxic to third instar gypsy moth larvae with an LD_{50} value of 0.119 µg/g but not to sixth instar larvae.[2] Milbemycin D eradicates *A. caninum* and is effective against *T. canis* in dogs when administered at doses of 0.05 and 0.1 mg/kg.[3] It prevents *D. immitis* infection in dogs, but is not effective against *T. vulpis* or *D. caninum*. Milbemycin D also activates glutamate- (EC_{50} = 89 nM) and GABA-gated chloride channels.[4,5]

References

1. Okazaki, T., Ono, M., Aoki, A., *et al.* Milbemycins, a new family of macrolide antibiotics: Producing organism and its mutants. *J. Antibiot. (Tokyo)* **36(4)**, 438-441 (1983).
2. Deecher, D.C., Brezner, J., and Tananbaum, S.W. Avermectin B1a and milbemycin D as contact toxicants for gypsy moth (Lepidoptera: Lymantriidae) larvae and eggs. *J. Econ. Entomol.* **80(6)**, 1284-1287 (1987).
3. Tagawa, M., Takiyama, A., Ejima, H., *et al.* Efficacy of milbemycin D against intestinal helminths of dogs. *Nippon Jui Chikusan Daigaku Kenkyu Hokoku* **33**, 97-99 (1984).
4. Arena, J.P., Liu, K.K., Paress, P.S., *et al.* The mechanism of action of avermectins in *Caenorhabditis elegans*: Correlation between activation of glutamate-sensitive chloride current, membrane binding, and biological activity. *J. Parasitol.* **81(2)**, 286-294 (1995).
5. Yamazaki, J., Matsumoto, K., Ono, H., *et al.* Macrolide compounds, ivermectin and milbemycin D, stimulate chloride channels sensitive to GABAergic drugs in cultured chick spinal neurons. *Comp. Biochem. Physiol. C* **93(1)**, 97-104 (1989).

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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