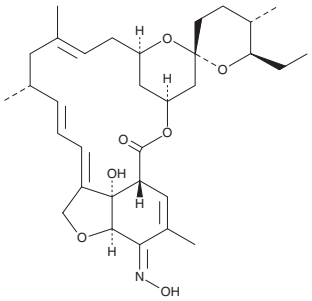
PRODUCT INFORMATION

Milbemycin A_4 oxime

Item No. 27938

CAS Registry No.:	93074-04-5
Formal Name:	(6R,25R)-5-demethoxy-28-deoxy-6,28-epoxy-25-ethyl-5-(hydroxyimino)-milbemycin B
Synonyms:	5-Ketomilbemycin A_4 oxime, 5-Oxomilbemycin A_4 5-oxime
MF:	$C_{32}H_{45}NO_7$
FW:	555.7
Purity:	≥99%
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Milbemycin A_4 oxime is supplied as a solid. A stock solution may be made by dissolving the milbemycin A_4 oxime in the solvent of choice, which should be purged with an inert gas. Milbemycin A_4 oxime is soluble in ethanol, methanol, DMSO, and dimethyl formamide.

Description

Milbemycin A_4 oxime is a derivative of milbemycin A_4 (Item No. 17155) and a component of milbemycin oxime (Item No. 17164), compounds that both have insecticidal and nematocidal activity.[1,2] Milbemycin A_4 oxime (0.05 mg/kg) reduces the number of microfilariae of the heartworm *D. immitis* in naturally infested dogs.[3] It inhibits the growth of clinical isolates of *C. glabrata* with MIC_{80} values ranging from 16 to greater than 32 µg/ml.[1] Milbemycin A_4 oxime (2.5 µg/ml) blocks efflux of fluconazole (Item No. 11594) from a clinical isolate of *C. glabrata*, but not from a strain lacking the efflux pumps CgCDR1 and PDH1, and reduces the MICs of fluconazole and 4-nitroquinoline 1-oxide in wild-type *C. glabrata*. It enhances adriamycin-induced inhibition of cell growth, as well as increases the intracellular accumulation of adriamycin and the P-glycoprotein substrate rhodamine 123 (Item No. 16672), in adriamycin-resistant, but not -sensitive, MCF-7 breast cancer cells in a concentration-dependent manner.[4]

References

1. Walker, B., Izumikawa, K., Tsai, H.F., *et al.* Milbemycin A4 oxime as a probe of azole transport in *Candida glabrata*. *FEMS Yeast Res.* **14(5),** 755-761 (2014).
2. Xu, Q., Li, J., Shen, Z., *et al.* An LC-MS method for determination of milbemycin oxime in dog plasma. *J. Chromatogr. Sci.* **52(9),** 999-1004 (2014).
3. Tsukamoto, Y., Sato, K., Mio, S., *et al.* Synthesis of 5-keto-5-oxime derivatives of milbemycins and their activities against microfilariae. *Agric. Biol. Chem.* **55(10),** 2615-2621 (1991).
4. Xiang, W., Gao, A.H., Liang, H., *et al.* Reversal of P-glycoprotein-mediated multidrug resistance *in vitro* by milbemycin compounds in adriamycin-resistant human breast carcinoma (MCF-7/adr) cells. *Toxicol. In Vitro* **24(6),** 1474-1481 (2010).

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