

PRODUCT INFORMATION

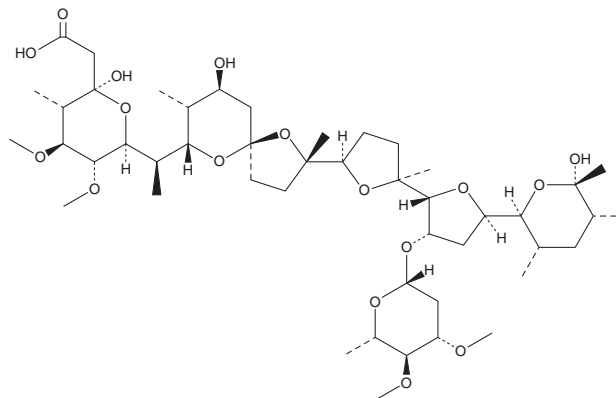


Maduramicin

Item No. 20583

CAS Registry No.: 79356-08-4

Formal Name: (2R,3S,4S,5R,6S)-6-[[[(1R)-1-[(2S,5R,7S,8R,9S)-2-[[[(2S,2'R,3'S,5R,5'R)-3'-[(2,6-dideoxy-3,4-di-O-methyl-β-L-arabino-hexopyranosyl)oxy]octahydro-2-methyl-5'-[(2S,3S,5R,6S)-tetrahydro-6-hydroxy-3,5,6-trimethyl-2H-pyran-2-yl][2,2'-bifuran]-5-yl]-9-hydroxy-2,8-dimethyl-1,6-dioxaspiro[4.5]dec-7-yl]ethyl]tetrahydro-2-hydroxy-4,5-dimethoxy-3-methyl-2H-pyran-2-acetic acid



Synonyms: Antibiotic X 14868A, Maduramycin

MF: C₄₇H₈₀O₁₇

FW: 917.1

Purity: ≥85%

Supplied as: A solid

Storage: -20°C

Stability: ≥4 years

Item Origin: Bacterium/*Actinomadura yunnaense*

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

Laboratory Procedures

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

Description

Maduramicin is a polyether ionophore antibiotic that has been found in *Nocardia*.¹ It selectively binds to potassium, rubidium, sodium, lithium, and cesium ions over divalent cations. Maduramicin is active against Gram-positive bacteria (MICs = 0.9-125 µg/ml) but not Gram-negative bacteria (MICs = >1,000 µg/ml) or fungi (MICs = 250->1,000 µg/ml). It reduces the viability of asexual and gametocyte *P. falciparum* parasites (EC₅₀s = 1.3 and 14.8 nM, respectively) and reduces *P. berghei* transmission in a mouse model of malaria when administered at doses of 4 and 8 mg/kg.² Maduramicin (5-10 ppm in the diet) reduces the severity of lesions and completely protects chicks against mortality in a model of coccidiosis induced by *E. tenella*.¹ Formulations containing maduramicin have been used in the treatment of coccidiosis in chickens.

References

1. Liu, C.-M., Hermann, T.E., Downey, A., *et al.* Novel polyether antibiotics X-14868A, B, C, and D produced by a *Nocardia*. Discovery, fermentation, biological as well as ionophore properties and taxonomy of the producing culture. *J. Antibiot. (Tokyo)* **36(4)**, 343-350 (1983).
2. Maron, M. I., Magle, C. T., Czeny, B., *et al.* Maduramicin rapidly eliminates malaria parasites and potentiates the gametocytocidal activity of the pyrazoleamide PA21A050. *Antimicrob. Agents Chemother.* **60(3)**, 1492-1499 (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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