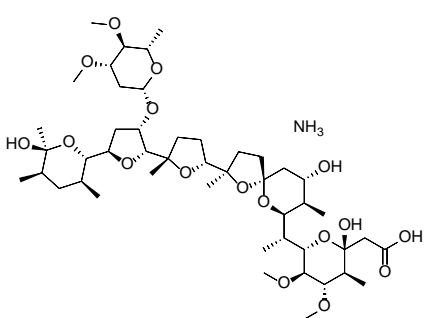


Product data sheet



MedKoo Cat#: 592823 Name: Maduramicin CAS: 84878-61-5 Chemical Formula: C ₄₇ H ₈₃ NO ₁₇ Exact Mass: 933.5661 Molecular Weight: 934.171	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Maduramicin inhibits proliferation and induces apoptosis in myoblast cells.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	1.0	1.07
DMSO	62.5	66.90

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.07 mL	5.35 mL	10.70 mL
5 mM	0.21 mL	1.07 mL	2.14 mL
10 mM	0.11 mL	0.54 mL	1.07 mL
50 mM	0.02 mL	0.11 mL	0.21 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Chen X, Liu C, Zhang M, Zhang Y. Maduramicin arrests myocardial cells at G0/G1 phase of the cell cycle through inhibiting AKT-Cyclin D1 signaling. *3 Biotech*. 2021 Jul;11(7):347. doi: 10.1007/s13205-021-02894-6. Epub 2021 Jun 20. PMID: 34221817; PMCID: PMC8215011.

2. Gao X, Zheng Y, Peng L, Ruan X, Ji H, Qiu Y, Liu X, Teng P, Guo D, Jiang S. Maduramicin induces apoptosis in chicken myocardial cells via intrinsic and extrinsic pathways. *Toxicol In Vitro*. 2018 Aug;50:190-200. doi: 10.1016/j.tiv.2018.03.008. Epub 2018 Mar 23. PMID: 29580986.

In vivo study

1. Gao X, Song X, Zuo R, Yang D, Ji C, Ji H, Peng L, Qiu Y, Guo D, Jiang S. Ionophore Toxin Maduramicin Produces Haff Disease-Like Rhabdomyolysis in a Mouse Model. *Int J Environ Res Public Health*. 2020 Oct 27;17(21):7882. doi: 10.3390/ijerph17217882. PMID: 33121157; PMCID: PMC7663665.

2. Ni H, Peng L, Gao X, Ji H, Ma J, Li Y, Jiang S. Effects of maduramicin on adult zebrafish (*Danio rerio*): Acute toxicity, tissue damage and oxidative stress. *Ecotoxicol Environ Saf*. 2019 Jan 30;168:249-259. doi: 10.1016/j.ecoenv.2018.10.040. Epub 2018 Oct 30. PMID: 30388543.

Product data sheet



7. Bioactivity

Biological target:

Maduramicin inhibits proliferation and induces apoptosis in myoblast cells.

In vitro activity

Maduramicin causes morphological changes and a decrease in the viability of chicken myocardial cells. Treatment with the pan-caspase inhibitor N-benzyloxycarbonyl-Val-Ala-Asp (O-Me) fluoromethyl ketone (z-VAD-fmk) ameliorated the apoptosis and cytotoxicity. Furthermore, intracellular Ca²⁺ and reactive oxygen species (ROS) were elevated, whereas mitochondrial membrane potential (MMP) and intracellular glutathione (GSH) decreased with exposure to maduramicin.

Reference: Toxicol In Vitro. 2018 Aug;50:190-200. <https://pubmed.ncbi.nlm.nih.gov/29580986/>

In vivo activity

Blood biochemical examination showed that 3.5 mg·kg⁻¹ and 7 mg·kg⁻¹ maduramicin in crayfish tissue homogenates significantly increased levels of alanine aminotransferase (ALT), aspartate aminotransferase (AST), blood urea nitrogen (BUN), lactate dehydrogenase (LDH), and creatine kinase (CK). Additionally, histopathological examination showed that multiple organs were damaged by maduramicin, including degeneration of liver cells, shedding of renal epithelial cells, and disturbance and partial lysis of myocardial and skeletal muscle filaments in the mice.

Reference: Int J Environ Res Public Health. 2020 Oct 27;17(21):7882. <https://pubmed.ncbi.nlm.nih.gov/33121157/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.