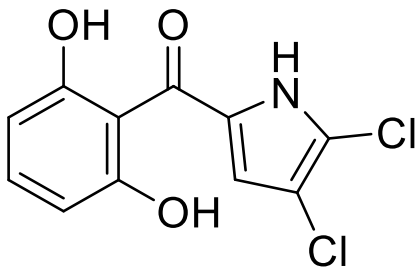
Product data sheet

MedKoo Cat#: 558450 Name: Pyoluteorin CAS#: 25683-07-2 Chemical Formula: $C_{11}H_7Cl_2NO_3$ Exact Mass: 270.9803 Molecular Weight: 272.08	
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:
Pyoluteorin is an antifungal agent composed of a 4,5-dichlorinated pyrrole group linked to a resorcinol moiety. The pyoluteorin biosynthetic gene cluster in Pseudomonas fluorescens Pf-5 encodes the halogenase PltA, which has been previously demonstrated to perform both chlorinations in vitro. Pyoluteorin protects various plants from diseases caused by soilborne pathogenic fungi.

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
To be determined	To be determined	To be determined

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.51 mL	12.54 mL	25.09 mL
5 mM	0.50 mL	2.51 mL	5.02 mL
10 mM	0.25 mL	1.25 mL	2.51 mL
50 mM	0.05 mL	0.25 mL	0.50 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. Fan D, Yu S, Yang Y, Qu S. Pyoluteorin Induces Apoptosis and Autophagy in NSCLC Cells. Biol Pharm Bull. 2021;44(7):976-983. doi: 10.1248/bpb.b21-00120. PMID: 34193693.
2. Brodhagen M, Henkels MD, Loper JE. Positive autoregulation and signaling properties of pyoluteorin, an antibiotic produced by the biological control organism Pseudomonas fluorescens Pf-5. Appl Environ Microbiol. 2004 Mar;70(3):1758-66. doi: 10.1128/AEM.70.3.1758-1766.2004. PMID: 15006802; PMCID: PMC368289.

In vivo study

To be determined

7. Bioactivity
Biological target:

Pyoluteorin demonstrates antibiotic, antifungal, and herbicidal activity. Pyoluteorin production is influenced by positive autoregulation and has been shown to function as a signal molecule negatively regulating additional secondary metabolites produced by Pseudomonas.

In vitro activity

Product data sheet

Pyoluteorin showed significant anti-tumor effects on human non-small cell lung cancer cell lines H1299 (IC50 = 1.57 μM) and H2030 (IC50 = 1.94 μM). Pyoluteorin could induce apoptosis and autophagy as evidence by the upregulation of caspase3 activity, the accumulation of LC3 and expression of apoptosis, or autophagy related proteins. Pyoluteorin induced autophagy through the c-Jun N-terminal kinase/B-cell lymphoma-2 (JNK/Bcl-2) signal pathway.

Reference: Biol Pharm Bull. 2021;44(7):976-983. https://pubmed.ncbi.nlm.nih.gov/34193693/

In vivo activity

To be determined

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.