

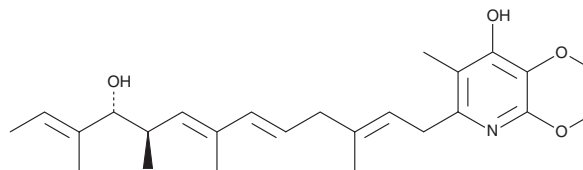
PRODUCT INFORMATION



Piericidin A

Item No. 15379

CAS Registry No.: 2738-64-9
Formal Name: 2-[(2E,5E,7E,11E)-10R-hydroxy-3,7,9R,11-tetramethyl-2,5,7,11-tridecatetraen-1-yl]-5,6-dimethoxy-3-methyl-4-pyridinol
Synonyms: AR 054, Shaoguanmycin B, SN 198E
MF: C₂₅H₃₇NO₄
FW: 415.6
Purity: ≥95%
UV/Vis.: λ_{max}: 238 nm
Supplied as: A solution in ethanol
Storage: -80°C
Stability: ≥2 years
Item Origin: Bacterium/*Streptomyces* sp.



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

Laboratory Procedures

Piericidin A is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Piericidin A is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml.

Description

Complex I, also known as NADH:ubiquinone oxidoreductase or NADH dehydrogenase (ubiquinone), catalyzes the transfer of electrons from NADH to ubiquinone (also known as coenzyme Q₁₀) as part of the respiratory chain leading to ATP generation. Piericidin A is an irreversible inhibitor of mitochondrial complex I that strongly associates with ubiquinone binding sites in both mitochondrial and bacterial forms of the enzyme.^{1,2} First identified as an insecticidal metabolite produced by *Streptomyces*, piericidin A was soon found to bind and inhibit complex I at nanomolar concentrations.^{3,4} The inhibition of complex I by piericidin A in the presence of NADH results in the generation of reactive oxygen species.⁵ In plants, piericidin A inhibits photosystem II, a water-plastoquinone oxidoreductase involved in light-dependent electron transfer.⁶ Piericidin A also suppresses the up-regulation of the glucose-regulated protein GRP78 in glucose-deprived, etoposide-resistant HT-29 cells, resulting in cell death (IC₅₀ = 7.7 nM).⁷

References

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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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