

Catalog # 10-3467

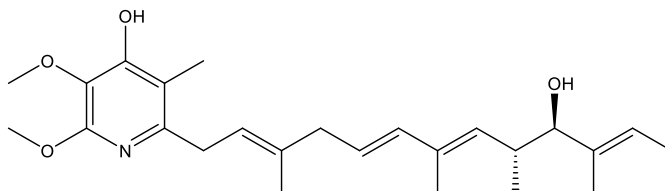
Piericidin A

CAS# 2738-64-9

Piericidin A1; Shaoguanmycin B; SN 198E; AR-054

2-(10-hydroxy-3,7,9,11-tetramethyl-2,4,7,11-tridecatetraenyl)-5,6-dimethoxy-3-methyl-4-pyridinol

Lot # X105433



A potent inhibitor of the mitochondrial and bacterial type I NADH-ubiquinone oxidoreductase (complex I).¹ Piericidin A is a ubiquinone analog which binds to the ubiquinone binding site of the enzyme.² It is an extremely useful tool for exploring the role of complex I in mitochondrial function in both normal and pathophysiology.³⁻⁵ Prevents upregulation of GRP78 and induces cell death in glucose-deprived, etoposide-resistant HT-29 cells (IC₅₀=7.7 nM).⁶

- 1) Fato *et al.* (2009), *Differential effects of mitochondrial Complex I inhibitors on production of reactive oxygen species*; *Biochim. Biophys. Acta*, **1787** 384
- 2) Zhou and Fenical (2016), *The unique chemistry and biology of the piericidins*; *J. Antibiot. (Tokyo)*, **69** 582
- 3) Bongard *et al.* (2015), *The effects of mitochondrial complex I blockade on ATP and permeability in rat pulmonary microvascular endothelial cells in culture (PMVEC) are overcome by coenzyme Q1 (CoQ1)*; *Free Radic. Biol. Med.*, **79** 69
- 4) Lee *et al.* (2013), *Isoniazid-induced cell death is precipitated by underlying mitochondrial complex I dysfunction in mouse hepatocytes*; *Free Radic. Biol. Med.*, **65** 584
- 5) Choi *et al.* (2011), *Loss of mitochondrial complex I activity potentiates dopamine neuron death induced by microtubule dysfunction in a Parkinson's disease model*; *J. Cell Biol.*, **192** 873
- 6) Hwang *et al.* (2008), *Etoposide-resistant HT-29 human colon carcinoma cells during glucose deprivation are sensitive to piericidin A, a GRP78 down regulator*; *J. Cell Physiol.*, **215** 243

PHYSICAL DATA

Molecular Weight:	415.57
Molecular Formula:	C ₂₅ H ₃₇ NO ₄
Purity:	>94% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (up to 25 mg/ml) or Ethanol (up to 20 mg/ml)
Physical Description:	Pale yellow wax
Storage and Stability:	Store as supplied desiccated at -20°C for up to 2 years from the date of purchase.

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