Catalog # 10-3467

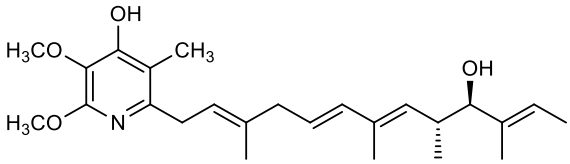
Piericidin A

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 # X105432



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 (IC_{50}=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:	Yellow solid
Storage and Stability:	Store as supplied desiccated at -20°C for up to 2 years from the date of purchase.

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