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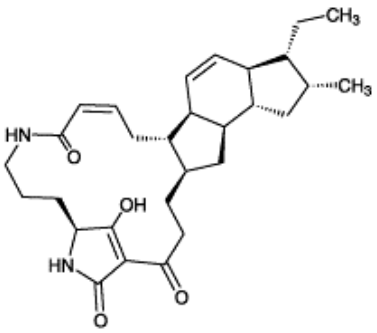
Product Information

Ikarugamycin
from *Streptomyces* sp.

Catalog Number **SML0188**
Storage Temperature –20 °C

CAS RN 36531-78-9
Synonyms: IKA, TU-6239 C3



Product Description
Molecular formula: $C_{29}H_{38}N_2O_4$
Molecular weight: 478.62

Ikarugamycin is an unusual pentacyclic tetramic acid produced by *Streptomyces* sp. that has a potent activity against the protozoan *Trichomonas vaginalis* with an IC_{50} of 0.3–1.25 µg/mL.[1,2] It also demonstrates selective Gram positive antibacterial activity[1] and has been shown to exhibit anti-ulcer activity possibly through inhibition of *Helicobacter*.

Ikarugamycin-induced inhibition of cholesteryl ester accumulation reduced uptake of oxidized low-density lipoprotein (LDL) in mouse macrophages J774.[2] Moreover, Ikarugamycin inhibits Nef-induced degradation of CD4 on Human Immunodeficiency Virus type 1 (HIV) infected T cells, thus increasing their half-life and possibly restoring some normal functions lost in the infected cells.[3] Ikarugamycin inhibition of clathrin-coated pit-mediated endocytosis indicates it is a useful agent for studying the process of endocytosis.[4] Ikarugamycin was found to inhibit HL-60 cell proliferation through genotoxicity[5] and apoptosis induction, and to activate caspase by induction of intracellular rise in calcium levels and activation of p38 MAP kinase.[5]

Purity: ≥98% (HPLC)

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Solubility in the following organic solvents requires heating and sonication: DMSO (1 mg/mL), chloroform (1 mg/mL), and methanol (1 mg/mL).

Storage/Stability
Store the product sealed at –20 °C. Under these conditions the product is stable for at least 3 years.

Solutions are stable for 3 months at –20 °C.

References
1. Jomon, K. et al., A new antibiotic, ikarugamycin. J. Antibiot., **25**, 271-280 (1972).
2. Hasumi, K. et al., Inhibition of the uptake of oxidized low-density lipoprotein in macrophage J774 by the antibiotic ikarugamycin. Eur. J. Biochem., **205**, 841-846 (1992).
3. Luo, T. et al., Human Immunodeficiency Virus type 1 Nef-induced CD4 cell surface downregulation is inhibited by ikarugamycin. J. Virol., **75**, 2488-2492 (2001).
4. Moscatelli, A. et al., Distinct endocytic pathways identified in tobacco pollen tubes using charged nanogold. J. Cell Sci., **120**, 3804-3819 (2007).
5. Popescu, R. et al., Ikarugamycin induces DNA damage, intracellular calcium increase, p38 MAP kinase activation and apoptosis in HL-60 human promyelocytic leukemia cells. Mutant. Res., **709-710**, 60-66 (2011).

KAA,EM,DWF,MAM 12/11-1