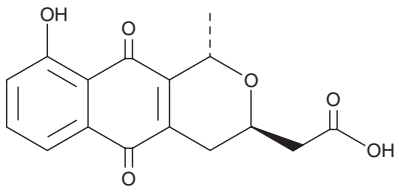
PRODUCT INFORMATION

Nanaomycin A

Item No. 9001479

CAS Registry No.: 52934-83-5
Formal Name: (1S,3R)-3,4,5,10-tetrahydro-9-hydroxy-1-methyl-5,10-dioxo-1H-naphtho[2,3-c]pyran-3-acetic acid
Synonyms: Antibiotic OS 3966A, Nanafrocin, NNM-A, NSC 267461
MF: $C_{16}H_{14}O_6$
FW: 302.3
Purity: ≥80%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Synthetic



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

Laboratory Procedures

Nanaomycin A is supplied as a solid. A stock solution may be made by dissolving the nanaomycin A in the solvent of choice, which should be purged with an inert gas. Nanaomycin A is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml.

Description

Nanaomycin A is a quinone bacterial metabolite originally isolated from *Streptomyces* that has antimicrobial activity.[1] It inhibits the growth of a variety of bacteria (MICs = <0.01-1.56 µg/ml), fungi (MICs = 0.4-3.12 µg/ml), and plant pathogenic fungi (MICs = 0.4-12.5 µg/ml), as well as *P. falciparum* (IC_{80} = 0.033 µM).[1,2] Nanaomycin A is a selective DNA methyltransferase 3B (DNMT3B) inhibitor that inhibits proliferation of HCT116, A549, and HL-60 cancer cells (IC_{50}s = 0.4, 4.1, and 0.8 µM, respectively).[3] Nanaomycin A promotes the differentiation of human induced pluripotent stem (iPS) cells into hepatoblasts at the definitive endoderm cell-to-hepatoblast stage, but not the iPS cell-to-definitive endoderm cell stage, when used at a concentration of 1 µM.[4]

References

1. Iwai, Y., Kimura, K., Takahashi, Y., *et al.* OM-173, new nanaomycin-type antibiotics produced by a strain of *Streptomyces*. Taxonomy, production, isolation and biological properties. *J. Antibiot. (Tokyo)* **36(10)**, 1268-1274 (1983).
2. Tanaka, T., Kamei, K., Otoguro, K., *et al.* Heme-dependent radical generation: Possible involvement in antimalarial action of non-peroxide microbial metabolites, nanaomycin A and radicicol. *J. Antibiot. (Tokyo)* **52(10)**, 880-888 (1999).
3. Kuck, D., Caulfield, T., Lyko, F., *et al.* Nanaomycin A selectively inhibits DNMT3B and reactivates silenced tumor suppressor genes in human cancer cells. *Mol. Cancer Ther.* **9(11)**, 3015-3023 (2010).
4. Nakamae, S., Toba, Y., Takayama, K., *et al.* Nanaomycin A treatment promotes hepatoblast differentiation from human induced pluripotent stem cells. *Stem Cells Dev.* **27(6)**, 405-414 (2018).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM