

# PRODUCT INFORMATION



## Nanchangmycin

Item No. 21679

CAS Registry No.: 35865-33-9

Formal Name: (2S,4R,6E,8S)-8-[(2S,2'R,4'S,5R,5'S,7R,7'R,8R,9S,9'S,10'R)-9-hydroxy-2,4',8,10'-tetramethyl-2'-[(2S,3S,5R,6R)-tetrahydro-6-hydroxy-6-(hydroxymethyl)-3,5-dimethyl-2H-pyran-2-yl]-9'-[[[(2S,5S,6R)-tetrahydro-5-methoxy-6-methyl-2H-pyran-2-yl]oxy][2,7'-bi-1,6-dioxaspiro[4.5]dec]-7-yl]-2,4,6-trimethyl-5-oxo-6-nonenic acid

Synonym: Nanchangmycin (free acid)

MF: C<sub>47</sub>H<sub>78</sub>O<sub>14</sub>

FW: 867.1

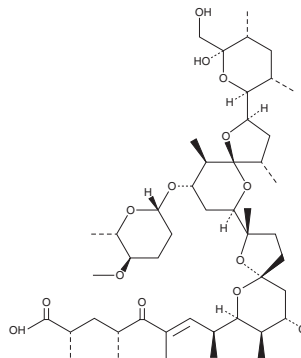
Purity: ≥95%

UV/Vis.: λ<sub>max</sub>: 232 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



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

### Laboratory Procedures

Dianemycin is supplied as a crystalline solid. A stock solution may be made by dissolving the dianemycin in the solvent of choice. Dianemycin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of dianemycin in ethanol and DMSO is approximately 25 mg/ml and approximately 30 mg/ml in DMF.

### Description

Dianemycin is a polyether ionophore antibiotic produced by *S. nanchangensis* NS3226 that has insecticidal and *in vitro* antibacterial properties.<sup>1,2</sup> Dianemycin exhibits antiviral properties against Zika virus (ZIKV) by blocking viral entry *in vitro* in a spectrum of cell types, including U2OS, human microvascular endothelial cells, and placental Jeg3 cells (IC<sub>50</sub>s = 100, 400, and 970 nM, respectively).<sup>3</sup> Dianemycin also blocks ZIKV entry into primary cells, including extravillous trophoblasts, human primary uterine microvascular endothelial cells, human umbilical vein endothelial cells, and murine primary midbrain neuron-glia cultures.<sup>3</sup> Efficacy of dianemycin extends to other viruses where it blocks entry into U2OS cells by West Nile, dengue, Sindbis, and chikungunya viruses.<sup>3</sup>

### References

1. Sun, Y., Zhou, X., Dong, H., *et al.* A complete gene cluster from *Streptomyces nanchangensis* NS3226 encoding biosynthesis of the polyether ionophore nanchangmycin. *Chem. Biol.* **10**(5), 431-441 (2003).
2. Liu, T., Lin, X., Zhou, X., *et al.* Mechanism of thioesterase-catalyzed chain release in the biosynthesis of the polyether antibiotic nanchangmycin. *Chem. Biol.* **15**(5), 449-458 (2008).
3. Rausch, K., Hackett, B., Weinbren, N.R., S., *et al.* Screening bioactives reveals nanchangmycin as a broad spectrum antiviral active against Zika virus. *Cell Rep.* **18**(3), 804-815 (2017).

#### 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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