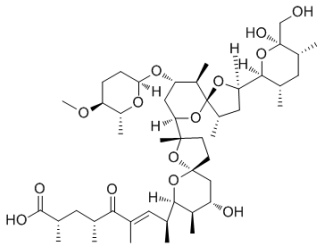
Dianemycin

Cat. No.:	HY-100528A		
CAS No.:	35865-33-9		
Molecular Formula:	$C_{47}H_{78}O_{14}$		
Molecular Weight:	867.11		
Target:	Bacterial		
Pathway:	Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



Solvent & Solubility

In Vitro

DMSO : 155 mg/mL (178.75 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (insoluble)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	1.1533 mL	5.7663 mL	11.5326 mL
	5 mM	0.2307 mL	1.1533 mL	2.3065 mL
	10 mM	0.1153 mL	0.5766 mL	1.1533 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: **10% DMSO >> 90% corn oil**
   Solubility: ≥ 2.58 mg/mL (2.98 mM); Clear solution
2. Add each solvent one by one: **10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline**
   Solubility: ≥ 2.58 mg/mL (2.98 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dianemycin (Nanchangmycin free acid), produced by Streptomyces nanchangensis NS3226, inhibits gram-positive bacteria[1]. Dianemycin is a broad spectrum antiviral active against Zika virus[2].

IC_{50} & Target

Bacteria[1]
Zika virus[2]

In Vitro

Dianemycin (Nanchangmycin) can be used as a growth promotant in poultry and to cure coccidiosis in chickens. Dianemycin is active against drug resistant strains of malaria[1].

Dianemycin (Nanchangmycin) as a potent inhibitor of Zika virus (ZIKV) entry across all cell types tested including physiologically relevant primary cells. Dianemycin potently reduces infection of all three strains of ZIKV across all three cell types. The IC_{50}s for infection are between 0.1 and 0.4 μM while Dianemycin has low toxicity in these ranges. In addition, DENV is inhibited by Dianemycin across cell types[2].

REFERENCES

[1]. Liu T, et al. Mechanism of thioesterase-catalyzed chain release in the biosynthesis of the polyether antibiotic Nanchangmycin. Chem Biol. 2008 May;15(5):449-58.

[2]. Rausch K, et al. Screening Bioactives Reveals Nanchangmycin as a Broad Spectrum Antiviral Active against Zika Virus. Cell Rep. 2017 Jan 17;18(3):804-815.

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