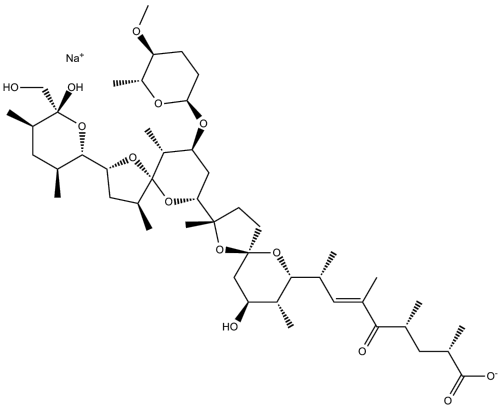
Product Data Sheet

Product Name: Nanchangmycin
Cat. No.: GC10957

Chemical Properties

Cas. No.	65101-87-3		
SMILES	CC1CC(C(OC1C2CC(C3(O2)C(C(CC(O3)C4(CCC5(O4)CC(C(C(O5)C(C)C=C(C)C(=O)C(C)CC(C)C(=O)[O-])C)O)C)OC6CCC(C(O6)C)OC)C)C)(CO)O)C.[Na+]		
Formula	$C_{48}H_{80}O_{13}$	M.Wt	889.1
Solubility	DMF: 30 mg/mL,DMSO: 25 mg/mL,Ethanol: 25 mg/mL	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Protocol

Cell experiment [1]:

Cell lines U2OS cells, Vero cells

Product Data Sheet

Preparation method	The solubility of this compound in DMSO is > 10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting condition	2 μM
Applications	Nanchangmycin was modestly toxic but very efficacious in inhibiting viral infection. Nanchangmycin blocked ZIKV infection with low toxicity in the sub-micromolar range. Nanchangmycin potently blocked ZIKV infection across cell types. The IC50 values for infection were between 0.1 and 0.4 μM. Nanchangmycin inhibited DENV across cell types. In Vero cells, treatment with nanchangmycin reduced viral titers by 4-log. Nanchangmycin blocked an early step in the viral life cycle. In U2OS cells, treatment with nanchangmycin (2 μM) blocked infection by an additional flavivirus (WNV, Kunjin) or alphaviruses (CHIKV, 181/25; SINV, HRsp). In HBMECs, nanchangmycin effectively blocked ZIKV infection in HUVECs and UtMECs. Nanchangmycin potently inhibited ZIKV infection in primary placental fibroblast cells.
Other notes	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

References:

[1]. Rausch K, Hackett B A, Weinbren N L, et al. Screening bioactives reveals nanchangmycin as a broad spectrum antiviral active against Zika virus[J]. Cell reports, 2017, 18(3): 804-815.

Background

Product Data Sheet

Nanchangmycin, produced by Streptomyces nanchangensis NS3226, inhibits gram-positive bacteria. Nanchangmycin is a broad spectrum antiviral active against Zika virus.

Nanchangmycin can be used as a growth promotant in poultry and to cure coccidiosis in chickens. Nanchangmycin is active against drug resistant strains of malaria[1]. Nanchangmycin as a potent inhibitor of Zika virus (ZIKV) entry across all cell types tested including physiologically relevant primary cells. Nanchangmycin potently reduces infection of all three strains of ZIKV across all three cell types. The IC50s for infection are between 0.1 and 0.4 μM while Nanchangmycin has low toxicity in these ranges. In addition, DENV is inhibited by Nanchangmycin 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.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA