Product Data Sheet

Product Name: Tetromycin A
Cat. No.: GC16810

Chemical Properties

Cas. No.	180027-83-2		
Chemical Name	(9Cl)-(1S,4S,4aS,6aR,7E,11E,12aR,15R,16aS,20aS,20bR)-4-(acetyloxy)-2,3,4,4a,6a,9,10,12a,15,16,20a,20b-dodecahydro-21-hydroxy-1,6,7,11,12a,14,15,20a-octamethyl-18H-16a,19-Metheno-16aH-benzo[b]naphth[2,1-j]oxacyclotetradecin-18,20(1H)-dione		
SMILES	CC1=C[C@@]2([H])[C@@]([C@@](C(C3=C4O)=O)(C)[C@]1([H])/C(C)=C/CC/C(C)=C/[C@@]5(C)[C@@]4(OC3=O)C[C@@H](C)C(C)=C5)([H])[C@@H](C)CC[C@@H]2OC(C)=O		
Formula	$C_{36}H_{48}O_6$	M.Wt	576.8
Solubility	DMF: soluble,DMSO: soluble,Ethanol: soluble,Methanol: soluble	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Tetromycin A		

Background

Tetromycin A, as an unusual tetronic acid, is a tetronic acid-based antibiotic. It is structurally related to saccharocarcin, chlorothricin, tetrocarcin, kijanimicin and versipelostatin and has been shown to be active against antibiotic resistant and susceptible Gram-positive bacteria including methicillin-resistant Staphylococcus aureus (MRSA). MRSA is a strain of bacteria which cannot be killed by a wide range of antibiotics, including methicillin, penicillin, and oxacillin, and causes infections in different parts of the body. The derivatives of tetromycin have been found to inhibit the cysteine protease cathepsin L with Ki values in the low micromolar range and have anti-trypanosomal activity. Tetromycin A probably targets the phosphatidylinositide-3'-

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kinase/Akt signaling pathway.

Akt, a downstream factor in the phosphatidylinositide-3'-kinase-dependent pathway, mediates a variety of biological responses, including protein synthesis, glucose uptake and the regulation of proliferation and apoptosis, which presumably contributes to acquisition of malignant properties of human cancers [1].

In vitro: Up to now, in vitro study of Tetromycin A is still in the development stage.

In vivo: Up to now, in vivo study of Tetromycin A is still in the development stage.

Reference:
[1]. Nakajima, H., Sakaguchi, K., Fujiwara, I., Mizuta, M., Tsuruga, M., Magae, J., & Mizuta, N. Apoptosis and inactivation of the PI3-kinase pathway by tetrocarcin A in breast cancers. Biochemical and Biophysical Research Communications. 2007; 356(1): 260-265.

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