Product Data Sheet

Product Name: Bafilomycin D
Cat. No.: GC12302

Chemical Properties

Cas. No.	98813-13-9		
Chemical Name	(3Z,5E,7R,8S,9S,11E,13E,15S,16R)-16-[(1S,2R,3S,5E,7S,8R)-2,8-dihydroxy-1,3,7,9-tetramethyl-4-oxo-5-decen-1-yl]-8-hydroxy-3,15-dimethoxy-5,7,9,11-tetramethyl-oxacyclohexadeca-3,5,11,13-tetraen-2-one		
SMILES	C[C@H](C(/C=C/[C@H](C)[C@H](O)C(C)C)=O)[C@H](O)[C@@H]([C@](OC(/C(OC)=C/C(C)=C/[C@@H](C)[C@@H](O)[C@@H](C)C1)=O)([H])[C@H](/C=C/C=C1\C)OC)C		
Formula	$C_{35}H_{56}O_8$	M.Wt	604.8
Solubility	Soluble in ethanol;Soluble in methanol;Soluble in DMSO	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	Bafilomycin D		

Background

Bafilomycin D is a potent inhibitor of vacuolar H+ ATPases (V-ATPases) with IC50 value of approximately 2 nM for the V-ATPase from the fungus N. crassa [1].

Ion pumps use the energy provided by the hydrolysis of ATP to energize ion-transport processes across cell membranes. ATPases can be distinguished to P-type, F-type and V-type ATPases. P-type ATPases have a phosphorylated transitional stage, F-type ATPases are primarily used in ATP synthesis, and V-type ATPases are genetically and functionally related to F-ATPases but function only in ATP breakdown [1].

The bafilomycins are fungal plecomacrolide class macrolide antibiotics isolated from the

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culture medium of Streptomyces sp. and are also high-affinity inhibitors of V-ATPases and can be used to study specifically the function of this type of ATPase. They inhibited the growth of Gram-positive bacteria and fungi. Bafilomycin C1 inhibited the enzymatic activity of the Na+, K+-ATPase with Ki value of 11 μmol/l and showed anthelmintic activity against Caenorhabditis elegans [1][2].

References:

[1]. Drse S, Altendorf K. Bafilomycins and concanamycins as inhibitors of V-ATPases and P-ATPases. J Exp Biol. 1997 Jan;200(Pt 1):1-8.

[2]. Bowman EJ, Siebers A, Altendorf K. Bafilomycins: a class of inhibitors of membrane ATPases from microorganisms, animal cells, and plant cells. Proc Natl Acad Sci U S A. 1988 Nov;85(21):7972-6.