Product Data Sheet

Product Name: Ophiobolin B
Cat. No.: GC15233

Chemical Properties

Cas. No.	5601-74-1		
Chemical Name	(1R,3aS,6aR,7S,9aR,10aS)-7-[(1S)-1,5-dimethyl-4-hexen-1-yl]-1,2,3,3a,6,6a,7,8,9,9a,10,10a-dodecahydro-1,7-dihydroxy-1,9a-dimethyl-3-oxo-dicyclopenta[a,d]cyclooctene-4-carboxaldehyde		
SMILES	C[C@@]12C[C@@]([H])([C@]3(/C(C=O)=C\C[C@]1([C@](O)(CC2)[C@H](CC/C=C(C)\C)C)[H])[H])[C@](CC3=O)(C)O		
Formula	$C_{25}H_{38}O_4$	M.Wt	402.6
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	Ophiobolin B		

Background

Ophiobolins are a group of sesterterpene-type phytotoxins produced by fungi belonging to the genera Bipolaris, Drechslera, Cephalosporium and Aspergillus. Ophiobolins are secondary metabolites of fungi. To date, more than 25 ophiobolin analogues have been identified. Ophiobolins have been involved in various biological actions, such as phytotoxic, cytotoxic, nematocidal, antimicrobial and antiviral effects [1].

In vitro: In maize coleoptile tissues, Ophiobolin B inhibited proton extrusion. Ophiobolin B counteracted the biological activity of fusicoccin (FC). Ophiobolin B inhibited FC-promoted proton extrusion, potassium uptake and cell enlargement [2]. Calmodulin solutions preincubation with ophiobolin A caused an instantaneous quenching of the intrinsic tyrosine fluorescence in a time-dependent manner. The inhibitory effects of

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ophiobolin A could not be reversed by dialysis, dilution, nor denaturation by urea in the presence of methanol followed by renaturation. Ophiobolin A also inhibited spinach calmodulin [3]. In cultured CLL cells, treatment with increasing concentrations of Ophiobolin B for 24 h displayed bioactivity towards leukemia cells with induction of apoptosis at nanomolar concentrations [3]. Ophiobolins B exihibited antifungal effects on different zygomycetes with MIC value of 25-50 μg/ml [4].

References:

[1] Au T K, Chick W S H, Leung P C. The biology of ophiobolins[J]. Life sciences, 2000, 67(7): 733-742.
[2] Gianani L, Cocucci S, Pardi D, et al. Effects of ophiobolin B on cell enlargement and H+/K+ exchange in maize coleoptile tissues[J]. Planta, 1979, 146(3): 271-274.
[3] Bladt T T, Dürr C, Knudsen P B, et al. Bio-activity and dereplication-based discovery of ophiobolins and other fungal secondary metabolites targeting leukemia cells[J]. Molecules, 2013, 18(12): 14629-14650.
[4] Krizsán K, Bencsik O, Nyilasi I, et al. Effect of the sesterterpene-type metabolites, ophiobolins A and B, on zygomycetes fungi[J]. FEMS microbiology letters, 2010, 313(2): 135-140.