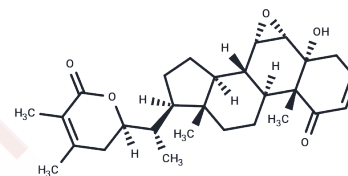


Withanolide B

Chemical Properties

CAS No. :	56973-41-2
Formula:	C ₂₈ H ₃₈ O ₅
Molecular Weight:	454.60
Storage:	Store at low temperature Powder: -20°C for 3 years In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>



Biological Description

Description	Withanolide B, a natural product isolated from <i>Withania somnifera</i> Dunal, promotes osteogenic differentiation of human bone marrow-derived mesenchymal stem cells (hBMSCs) via the ERK1/2 and Wnt/ β -catenin signalling pathways, thereby enhancing bone healing. Withanolide B exhibits affinity for the catalytic domain of PARP-1.
Targets(IC50)	ERK,PARP,Wnt/beta-catenin
In vitro	Methods: SK-N-SH cells were treated with Withanolide B (10-100 μ M, 48 hours), and cell viability was assessed using the MTT assay. Results: The IC ₅₀ value of Withanolide B for SK-N-SH cells was 14.84 \pm 1.45 μ M, indicating that Withanolide B exhibits low toxicity to neuronal cells. [1]
In vivo	Methods: By injecting Withanolide B (10 mg/kg) into the bone defect site of the SD rat tibial osteotomy model, the effect of Withanolide B on the osteogenic differentiation of hBMSCs was investigated. Results: Micro-CT scanning and histological analysis demonstrated that Withanolide B significantly promoted the healing of bone defects. [2]

Solubility Information

Solubility	Acetone: 0.80 mg/mL (1.76 mM),Sonication is recommended. DMSO: 2.50 mg/mL (5.50 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1997 mL	10.9987 mL	21.9974 mL
5 mM	0.4399 mL	2.1997 mL	4.3995 mL
10 mM	0.220 mL	1.0999 mL	2.1997 mL
50 mM	0.044 mL	0.220 mL	0.4399 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Dubey S, et al. Improving the inhibition of β -amyloid aggregation by withanolide and withanoside derivatives. *Int J Biol Macromol.* 2021 Mar 15;173:56-65.

Kuang Z, et al. Withanolide B promotes osteogenic differentiation of human bone marrow mesenchymal stem cells via ERK1/2 and Wnt/ β -catenin signaling pathways. *Int Immunopharmacol.* 2020 Nov;88:106960.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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