

Actein

Chemical Properties

CAS No. : 18642-44-9

Formula: C₃₇H₅₆O₁₁

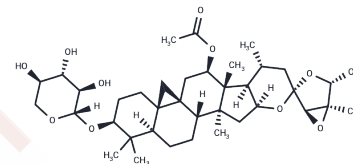
Molecular Weight: 676.83

Keep away from direct sunlight, Keep away from moisture

Storage:

Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	Actein has a stimulatory effect on osteoblastic bone formation or has potential activity against osteoporosis, it also can prevent oxidative damage to osteoblasts in osteoporotic patients. Actein's ability to pathways involved in lipid disorders and carcinogenesis may make it a new agent for preventing and treating these major disorders, it has been shown to inhibit the proliferation of human breast cancer cells, by altering the activity of the ER IP3 receptor and Na,K-ATPase, inducing calcium release and modulating the NF-κB and MEK pathways.
Targets(IC50)	Apoptosis,Akt,Autophagy,JNK,ROS
In vitro	Actein, isolated from black cohosh, was subjected to in vitro experiments to investigate its functional bioactivities in osteoblastic MC3T3-E1 cells. METHODS AND RESULTS: Actein caused a significant elevation of alkaline phosphatase activity, collagen synthesis, osteocalcin production, mineralization, and glutathione content in the cells, suggesting that Actein has a stimulatory effect on osteoblastic bone formation or has potential activity against osteoporosis. We investigated the protective effects of Actein on mitochondrial electron transport inhibitor, antimycin A induced toxicity in osteoblastic MC3T3-E1 cells. Exposure of MC3T3-E1 cells to antimycin A caused significant decrease in cell viability and mineralization. However, pretreatment with Actein prior to antimycin A exposure significantly reduced antimycin A-induced cell damage by preventing mitochondrial membrane potential dissipation, complex IV inactivation, cardiolipin oxidation, ROS release, and nitrotyrosine increase, suggesting that Actein may be useful for protecting mitochondria against a burst of oxidative stress. In addition, Actein increased the phosphorylation of CREB (cAMP-response element-binding protein) inhibited by antimycin A and decreased the production of TNF-α induced by antimycin A. CONCLUSIONS:These findings suggest that Actein could prevent oxidative damage to osteoblasts in osteoporotic patients.

Solubility Information

Solubility	DMSO: 60 mg/mL (88.65 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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In vivo Formulation	10% DMSO+40% PEG300+5% Tween-80+45% Saline: 2.5 mg/mL (3.69 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4775 mL	7.3874 mL	14.7748 mL
5 mM	0.2955 mL	1.4775 mL	2.955 mL
10 mM	0.1477 mL	0.7387 mL	1.4775 mL
50 mM	0.0295 mL	0.1477 mL	0.2955 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

Actein isolated from black cohosh promotes the function of osteoblastic MC3T3-E1 cells. J Med Food. 2014 Apr;17 (4):414-23.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only· Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481