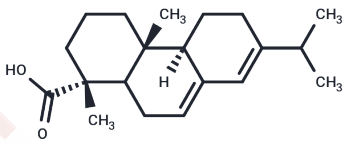
Data Sheet (Cat.No.T3090)

TargetMol

Abietic Acid

Chemical Properties



CAS No. : 514-10-3

Formula: C20H30O2

Molecular Weight: 302.45

Storage: Store at low temperature
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	Abietic Acid (Sylvic acid) is a diterpene extracted from Pimenta racemosavar. grissea with antimicrobial, antiproliferative and anti-obesity activities. It inhibits lipoxygenase activity and may be studied in allergic diseases.
Targets(IC50)	MMP,Ferroptosis,Antibacterial,IκB/IKK,Lipoxygenase,PPAR
In vitro	**METHODS**: Different concentrations of Abietic Acid (Sylvic acid) (20, 40, 80, 160 and 320 μmol/l) were added to the cell culture medium of RAW264.7 cells and then incubation was continued for 26 hours. In order for Abietic Acid (Sylvic acid) treatment to have an effect on inflammatory mediator secretion, different concentrations of Abietic Acid (Sylvic acid) (20, 40 and 80 μmol/l) were added to the cell culture medium of RAW264.7 cells and incubated for 2 h. Then 1 μg/ml LPS was added to the cell culture medium of RAW264.7 cells and incubation was continued for 24 h. The cell culture medium of RAW264.7 cells was then incubated for 2 h. The cell culture medium of RAW264.7 cells was then incubated for 24 h. **RESULTS** Low concentrations (20, 40 and 80 μmol/l) of Abietic Acid (Sylvic acid) did not affect the viability of RAW264.7 cells, while high concentrations (160 and 320 μmol/l) of Abietic Acid (Sylvic acid) decreased the viability of RAW264.7 cells. Low concentrations of Abietic Acid (Sylvic acid) significantly reduced the concentrations of IL-1β, TNF-α, IL-6 and MIP-2 induced by LPS in the cell culture medium of RAW264.7 cells. [2]
In vivo	**METHODS**: Swiss mice (Mus musculus) were treated orally in 50, 100, and 200 mg/kg of Abietic Acid (Sylvic acid) central nervous system (CNS) effects were assessed using open-field and rotational assays, and anti-oedema activity was investigated by measuring carrageenan, dextran, histamine, arachidonic acid, and prostaglandin-induced paw edema. **RESULTS** Oral administration of Abietic Acid (Sylvic acid) (200 mg/kg) showed no evidence of CNS effects, and the compound also exhibited significant anti-edema and anti-inflammatory activity in carrageenan and dextrose models. [1]

Solubility Information

Solubility	DMSO: 250 mg/mL (826.58 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (6.61 mM),Sonication is recommended. *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.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3063 mL	16.5317 mL	33.0633 mL
5 mM	0.6613 mL	3.3063 mL	6.6127 mL
10 mM	0.3306 mL	1.6532 mL	3.3063 mL
50 mM	0.0661 mL	0.3306 mL	0.6613 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

de Lima Silva MG, et al. Antiedematogenic and Analgesic Activities of Abietic Acid in Mice. Chem Biodivers. 2023 Dec;20(12):e202300906.

Fang H, et al. Abietic acid attenuates sepsis-induced lung injury by inhibiting nuclear factor kappa-light-chain-enhancer of activated B cells (NF-κB) pathway to inhibit M1 macrophage polarization. Exp Anim. 2022 Nov 10;71 (4):481-490.