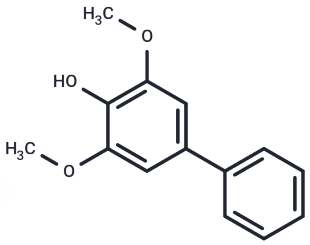
Data Sheet (Cat.No.TN3469)

TargetMol

Aucuparin

Chemical Properties



CAS No. : 3687-28-3

Formula: C14H14O3

Molecular Weight: 230.26

Appearance: Solid

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

Biological Description

Description	Aucuparin (2,6-dimethoxy-4-phenylphenol) is a plant antibiotic with anti-inflammatory activity. Aucuparin inhibited pulmonary fibrosis in mouse models induced by bleomycin (BLM). ABTS and FRAP showed clear scavenging activity. Aucuparin inhibited superoxide production of human neutrophils induced by fmlp, and its IC50 was 17.0μM.
Targets(IC50)	Others,NADPH-oxidase,TGF-beta/Smad
In vitro	The formation of Aucuparin, a well-known biphenyl, is induced by yeast extract (YE) in cell cultures of Sorbus aucuparia. Here we demonstrate that the addition of YE to the cell cultures results in a burst of reactive oxygen species (ROS; H(2)O(2) and O(2) (-)), followed by transcriptional activation of the biphenyl synthase 1 gene (BIS1) encoding the key enzyme of the biphenyl biosynthetic pathway and Aucuparin accumulation. When the cell cultures were pretreated with superoxide dismutase specific inhibitor N,N-diethyldithiocarbamic acid, although O(2) (-) continued to be generated, the H(2)O(2) accumulation, BIS1 expression, and Aucuparin production were blocked. Interestingly, an exogenous supply of H(2)O(2) in the range of 0.05-10 mM failed to induce Aucuparin accumulation. These results indicate that endogenous generation of H(2)O(2) rather than that of O(2) (-) is a key factor in YE-induced accumulation of biphenyl phytoalexins in cell cultures of S. aucuparia.[1]
In vivo	Aucuparin, a natural product isolated from Sorbus aucuparia, inhibited pulmonary fibrosis in bleomycin (BLM)-induced lung fibrosis mouse model. In the lung samples of mice treated with aucuparin, the gene expression of inflammation and macrophage activation markers was reduced compared to those treated with BLM alone. Moreover, aucuparin decreased the expression of profibrotic marker genes and increased the expression of antifibrotic marker genes. Finally, we observed that aucuparin significantly suppressed transforming growth factor-β-induced activation of inflammatory cytokine production and collagen synthesis from macrophages and fibroblasts, respectively. [3]

Solubility Information

Solubility	DMSO: 2.31 mg/mL (10.03 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.3429 mL	21.7146 mL	43.4292 mL
5 mM	0.8686 mL	4.3429 mL	8.6858 mL
10 mM	0.4343 mL	2.1715 mL	4.3429 mL
50 mM	0.0869 mL	0.4343 mL	0.8686 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.

Reference

Qiu X,et al. Endogenous hydrogen peroxide is a key factor in the yeast extract-induced activation of biphenyl biosynthesis in cell cultures of Sorbus aucuparia. Planta. 2012;235(1):217-223.
Chen JJ, et al. A new dibenzofuran and further constituents from the stems of Pourthiaea lucida with inhibitory activity on superoxide generation by neutrophils. Chem Biodivers. 2009;6(5):774-778.
Lee SY, et al. Aucuparin Suppresses Bleomycin-Induced Pulmonary Fibrosis Via Anti-Inflammatory Activity. J Med Food. 2021;24(2):151-160.