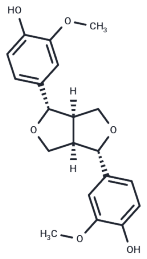
Data Sheet (Cat.No.TN2080)

TargetMol

Pinoresinol

Chemical Properties



CAS No. : 487-36-5

Formula: C20H22O6

Molecular Weight: 358.39

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	Pinoresinol ((+)-Pinoresinol) has antiinflammatory, hepatoprotective, and fungicidal activities, it can protect pial microcirculation from I-reperfusion injury, to increase nitric oxide release and to reduce oxidative stress preserving pial blood flow distribution; it may exert pharmacologically interesting effects via modulation of the insulin-like signalling pathway in C.elegans. Pinoresinol causes an upregulation of the CDK inhibitor p21(WAF1/Cip1) both at mRNA and protein levels, inhibits NF-kappaB and activating protein 1 (AP-1).
Targets(IC50)	Apoptosis,NF-κB,CDK,p53
In vitro	Six lignan standards [secoisolariciresinol diglucoside (SDG), secoisolariciresinol (SECO), Pinoresinol (PINO), lariciresinol, matairesinol (MAT), and hydroxymatairesinol] and their colonic metabolites [enterolactone (ENL) and enterodiol] were studied. First, differentiated cells were exposed to SDG, SECO, PINO, or ENL at increasing concentrations for 4 h, and their cellular contents (before and after deconjugation) were determined by HPLC. Second, in IL-1β-stimulated confluent and/or differentiated cells, lignan effects were tested on different soluble proinflammatory mediators quantified by enzyme immunoassays and on the NF-κB activation pathway by using cells transiently transfected. SECO, PINO, and ENL, but not SDG, were taken up and partly conjugated by cells, which is a saturable conjugation process. PINO was the most efficiently conjugated (75% of total in cells). In inflamed cells, PINO significantly reduced IL-6 by 65% and 30% in confluent and differentiated cells, respectively, and cyclooxygenase (COX)-2-derived prostaglandin E(2) by 62% in confluent cells. In contrast, MAT increased significantly COX-2-derived prostaglandin E(2) in confluent cells. Moreover, PINO dose-dependently decreased IL-6 and macrophage chemoattractant protein-1 secretions and NF-κB activity[1]

Solubility Information

Solubility	DMSO: 12 mg/mL (33.48 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 (5.58 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*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	2.7903 mL	13.9513 mL	27.9026 mL
5 mM	0.5581 mL	2.7903 mL	5.5805 mL
10 mM	0.279 mL	1.3951 mL	2.7903 mL
50 mM	0.0558 mL	0.279 mL	0.5581 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

Among plant lignans, pinoresinol has the strongest antiinflammatory properties in human intestinal Caco-2 cells.J Nutr. 2012 Oct;142(10):1798-805.