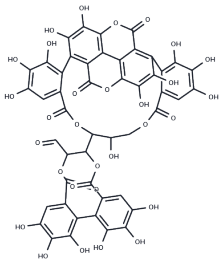
Data Sheet (Cat.No.T3921)

TargetMol

Punicalagin

Chemical Properties



CAS No. : 65995-63-3

Formula: C48H28O30

Molecular Weight: 1084.72

Storage: Keep away from direct sunlight
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	Punicalagin is a major ellagitannin found in pomegranates that is reported to produce antioxidant, anti-inflammatory, and anticancer effects. It has been shown to prevent high-fat diet-induced obesity-associated accumulation of cardiac triglyceride and cholesterol, as well as myocardial damage, via AMPK-mediated modulation of mitochondria and phase II enzymes.
Targets(IC50)	HBV,SARS-CoV
In vitro	**METHODS**: Human cervical cells ME-180 were treated with Punicalagin (10-100 μM) for 24 h. Cell viability was measured by MTT assay. **RESULTS**: Punicalagin showed significant concentration-dependent cytotoxicity against ME-180 cells. The cell viability of Punicalagin-treated cells was reduced by approximately 80% compared to control cells. [1] **METHODS**: Human cervical cancer cells, the HeLa, were treated with Punicalagin (25-100 μM) for 36 h. The cell cycle was detected by Flow cytometry. **RESULTS**: The number of G1-phase cells increased significantly after 36 h of Punicalagin treatment. [2]
In vivo	**METHODS**: To study the effects on MTX-induced hepatotoxicity in mice, Punicalagin (25-50 mg/kg, 0.5% CMC) was administered orally to Swiss albino mice once daily for ten days, followed by a single dose of MTX (20 mg/kg) injected intraperitoneally on the seventh day. **RESULTS**: Punicalagin significantly attenuated MTX-induced elevation of serum aminotransferases, ALP, and LDH, as well as hepatic oxidative stress measures, and enhanced hepatic antioxidant defense. In MTX-induced mouse liver, Punicalagin inhibited oxidative damage, inflammation and apoptosis and upregulated Nrf2. [3]

Solubility Information

Solubility	H2O: 100 mg/mL (92.19 mM),Sonication is recommended. DMSO: 260 mg/mL (239.69 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: 5 mg/mL (4.61 mM),Sonication is recommended.

In vivo Formulation	*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	0.9219 mL	4.6095 mL	9.219 mL
5 mM	0.1844 mL	0.9219 mL	1.8438 mL
10 mM	0.0922 mL	0.4609 mL	0.9219 mL
50 mM	0.0184 mL	0.0922 mL	0.1844 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

Zhang L, et al. Punicalagin promotes the apoptosis in human cervical cancer (ME-180) cells through mitochondrial pathway and by inhibiting the NF-kB signaling pathway. Saudi J Biol Sci. 2020 Apr;27(4):1100-1106.
Luo Z, Kuang X, Zhou Q, et al. Inhibitory effects of baicalein against herpes simplex virus type 1. Acta Pharmaceutica Sinica B. 2020, 10(12): 2323-2338
Tang J, et al. Punicalagin suppresses the proliferation and invasion of cervical cancer cells through inhibition of the β-catenin pathway. Mol Med Rep. 2017 Aug;16(2):1439-1444.
Al-Khawalde AAA, et al. Punicalagin Protects against the Development of Methotrexate-Induced Hepatotoxicity in Mice via Activating Nrf2 Signaling and Decreasing Oxidative Stress, Inflammation, and Cell Death. Int J Mol Sci. 2022 Oct 15;23(20):12334.