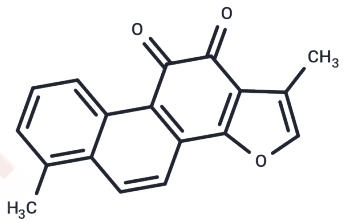
Data Sheet (Cat.No.T2907)

TargetMol

Tanshinone I

Chemical Properties



CAS No. : 568-73-0

Formula: C18H12O3

Molecular Weight: 276.29

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	Tanshinone I (Tanshinone A), an active principle isolated from the herbal medicine Salvia miltiorrhiza, displays cytotoxicity against tumor cells.
Targets(IC50)	Phospholipase
In vivo	Tanshinone I demonstrates significant anti-inflammatory effects in rat models of both acute and chronic inflammation, specifically in carrageenan (CGN)-induced paw oedema and adjuvant-induced arthritis (AIA). Employing these classical animal models, Tanshinone I, upon oral administration, significantly mitigates CGN-induced paw oedema with a 47% inhibition at a dosage of 160 mg/kg, in contrast to indomethacin's IC50 of 7.1 mg/kg. Additionally, in the AIA model, it achieves a 27% reduction in secondary inflammation on the 18th day at a daily oral dose of 50 mg/kg, while prednisolone displays a potent 65% inhibition at 5 mg/kg/day.
Kinase Assay	As sources of PLA2, human recombinant sPLA2 (type IIA) is purified from CHO cells transfected with the PLA2 gene and rabbit recombinant platelet cPLA2 is obtained through its expression in baculovirus. The standard reaction mixture (200 μL) contained 100 mM Tris-HCl buffer (pH 9.0) with 6 mM CaCl2 and 20 nmol 1-acyl-[1-14C]-arachidonyl-sn-glycerophosphoethanolamine (2000 cpm/nmol) in the presence or absence of Tanshinone I. The reaction is started by adding 50 ng purified sPLA2 or cPLA2. After 20 min at 37°C, the free fatty acid generated is analysed. Under these standard conditions, the reaction mixture in the absence of Tanshinone I released approximately 10% of free fatty acid from the phospholipid substrate added[1].
Cell Research	RAW 264.7 cells are cultured with DMEM supplemented with 10% FBS and 1% antibiotics under 5% CO2 at 37°C. Briefly, cells are plated in 96-well plates (2×105 cells/well). LPS (1 ug/mL) and Tanshinone I are simultaneously added and incubated for 24 h, unless otherwise specified. The PGE2 concentration in the medium is measured using an EIA kit for PGE2. In order to determine the effects of Tanshinone I on PGE2 production after induction of COX-2, cells are incubated with LPS (1 ug/mL) for 24 h and thoroughly washed. Then, Tanshinone I is added without LPS and the cells are incubated for another 24 h. From the medium, PGE2 concentrations are measured. The cytotoxicity of Tanshinone I to RAW cells is checked using the MTT assay. Tanshinone I does not show any cytotoxicity up to 100 uM[1].

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: < 1 mg/mL (insoluble or slightly soluble), DMSO: 2.5 mg/mL (9.05 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.6194 mL	18.0969 mL	36.1939 mL
5 mM	0.7239 mL	3.6194 mL	7.2388 mL
10 mM	0.3619 mL	1.8097 mL	3.6194 mL
50 mM	0.0724 mL	0.3619 mL	0.7239 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

Kim SY, et al. Phytother Res, 2002, 16(7), 616-620.
Bai Y, Wen H, Lin J, et al.Tanshinone I improves renal fibrosis by promoting gluconeogenesis through upregulation of peroxisome proliferator-activated receptor-γ coactivator 1α.Renal Failure.2024, 46(2): 2433710.
Nizamutdinova IT, et al. Carcinogenesis, 2008, 29(10), 1885-1892.