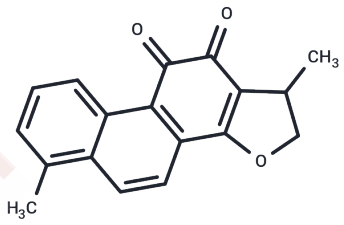
Data Sheet (Cat.No.T3374)

TargetMol

Dihydrotanshinone I

Chemical Properties



CAS No. : 87205-99-0

Formula: C18H14O3

Molecular Weight: 278.3

Appearance: no data available

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

Biological Description

Description	Dihydrotanshinone I (DHTS) is a natural compound extracted from Salvia miltiorrhiza Bunge used for treating of cardiovascular diseases.
Targets(IC50)	ROS,SARS-CoV
In vitro	Dihydrotestosterone (DHT, 10 nM) effectively reduces the expression of lectin-like ox-LDL receptor-1 (LOX-1) and NADPH oxidase 4 (NOX4), alongside diminishing reactive oxygen species (ROS) production, nuclear translocation of NF-κB, ox-LDL endocytosis, and monocyte adhesion in lipopolysaccharide (LPS)-stimulated human umbilical vein endothelial cells (HUVECs)[1]. Additionally, Dihydrotanshinone I prompts caspase-dependent apoptosis in HCT116 cells, with this apoptosis being both concentration and ROS dependent. The presence of Z-VAD-fmk entirely prevents apoptosis, while pre-treatment with Z-LEHD-fmk significantly reduces it, and Z-IETD-fmk only achieves partial inhibition. Intriguingly, knocking down caspase-2 significantly enhances apoptosis induced by Dihydrotanshinone I[3].
In vivo	In ApoE-/- mice fed with an atherogenic diet, DHT (10 and 25 mg kg-1) significantly attenuated atherosclerotic plaque formation, altered serum lipid profile, decreased oxidative stress and shrunk necrotic core areas. DHT dramatically inhibits the enhanced expression of LOX-1, NOX4, and NF-κB in aorta[1]. Dihydrotanshinone I (1, 2, 4 mg/kg) treatment can improve cardiac function, reduce infarct size, ameliorate the variations in myocardial zymogram and histopathological disorders, decrease 20-HETE generation, and regulate apoptosis-related protein in myocardial ischemia-reperfusion rats[2].
Kinase Assay	Cells are treated with various concentrations of Dihydrotanshinone I (3.13-20 μM) for 48 h. For the activity assay, Ac-DEVD-AMC (1 μg/μL), Ac-IETD-AMC (1 μg/μL) or Ac-LEDH-AMC (1 μg/μL) and cell lysate are added into Protease Assay Buffer in 96-well plate. Reaction mixtures with lysis buffer are used as negative controls. Cells treated with DMSO (0.1%) are treated as vehicle control. The reaction mixtures are incubated for 1 h at 37°C. The AMC liberated from the substrates is measured using spectrofluorometer of Victor 2 plate reader with an excitation wavelength of 380 nm and an emission wavelength of 430 nm.

Solubility Information

Solubility	DMSO: 3.85 mg/mL (13.82 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.5932 mL	17.9662 mL	35.9324 mL
5 mM	0.7186 mL	3.5932 mL	7.1865 mL
10 mM	0.3593 mL	1.7966 mL	3.5932 mL
50 mM	0.0719 mL	0.3593 mL	0.7186 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

Wei, Y., Xu, M., Ren, Y., Lu, G., Xu, Y., Song, Y., & Ji, H. (2016). The cardioprotection of dihydrotanshinone I against myocardial ischemia-reperfusion injury via inhibition of arachidonic acid ω-hydroxylase. Canadian Journal Of Physiology And Pharmacology, 94(12), 1267-1275. doi: 10.1139/cjpp-2016-0036

Wei Z, Zhan X, Ding K, et al. Dihydrotanshinone I Specifically Inhibits NLRP3 Inflammasome Activation and Protects Against Septic Shock In Vivo. Frontiers in Pharmacology. 2021: 2623.

Wang L, et al. Dihydrotanshinone I induced apoptosis and autophagy through caspase dependent pathway in colon cancer. Phytomedicine. 2015 Nov 15;22(12):1079-87.

Li X W, Yuan S C, Wang M, et al.Rosmarinic acid ameliorates autoimmune responses through suppression of intracellular nucleic acid-mediated type I interferon expression.Biochemical and Biophysical Research Communications.2023