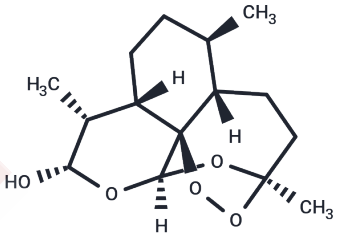
Data Sheet (Cat.No.T0607)

TargetMol

Dihydroartemisinin

Chemical Properties



CAS No. : 71939-50-9

Formula: C15H24O5

Molecular Weight: 284.35

Storage: Keep away from moisture
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	Dihydroartemisinin (Artenimol) is an antimalarial drug.
Targets(IC50)	Apoptosis,NF-κB,Parasite,Autophagy
In vitro	**METHODS**: Ovarian cancer cell lines ES2 and A2780 were treated with Dihydroartemisinin (0, 2.5, 5, 10, 20, 50, 100, and 200) for 48 hours, and the cell viability was detected by MTT assay. **RESULTS**: Dihydroartemisinin inhibited the growth of ES2 (IC50=8.77 ± 1.23 μM) and A2780 cells (IC50=8.77 ± 1.23 μM). [1] **METHODS**: Glioblastoma cell lines U87 and U251 were treated with Dihydroartemisinin (0.2, 2, 20, 50, 100, 200 and 600 μmol/L) for 24, 48, and 72 hours, and the cell viability was detected by CCK-8 assay. **RESULTS**: Dihydroartemisinin inhibited the growth of U87 cells (IC50 values of 11.26 μM, 7.42 μM and 5.77 μM at 24, 48 and 72 hours, respectively) and U251 cells (IC50 values of 11.67 at 24, 48 and 72 hours, respectively) μM, 7.55μM, and 5.83μM). [2] **METHODS**: Colorectal cancer cell lines SW620, DLD-1, HCT116, and COLO205 were treated with Dihydroartemisinin (0.2, 2, 20, 50, 100, 200, and 600 μmol /L) for 24 hours, and the cell viability was detected by MTT assay. **RESULTS**: Dihydroartemisinin inhibited the proliferation of SW620 cells (IC50=35.96 ± 8.76 μM), DLD-1 cells (IC50= 15.08 ± 1.70 μM) and HCT116 cells (IC50=19.53 ± 1.24) μM), COLO205 cells (IC50=38.46 ± 4.15 μM). [3]
In vivo	**METHODS**: To study the antitumor activity of Dihydroartemisinin, an orthotopic CRC mouse model of HCT116 cells or a xenograft mouse model of DLD-1 cells was administered with Dihydroartemisinin (15 mg/kg, 45 mg/kg). **RESULTS**: In an orthotopic CRC mouse model of HCT116 cells, Dihydroartemisinin administered at a dose of 15 mg/kg or 45 mg/kg significantly inhibited tumor growth starting from the 18th day of treatment. In a xenograft mouse model of DLD-1 cells, Dihydroartemisinin significantly reduced tumor volume and weight. [3] **METHODS**: To study the immunomodulatory effect of Dihydroartemisinin, healthy BALB/c mice were treated with Dihydroartemisinin (0.1 mg/mL) by gavage for 26 days. **RESULTS**: Dihydroartemisinin significantly up-regulated c-Fos expression in plasma cells and regulatory T cells (Treg). [4]

Cell Research	BxPc3-RFP cells (3.5×104cells/well) were seeded in poly D-lysine-coated black, μClear 96-well plates with 0.2 ml medium. After 24 h, the cells were treated with dimethyl sulfoxide (DMSO) (control) or different concentrations (2.5, 10, 40, or 80 μM) of DHA dissolved in DMSO for 24, 48, and 72 h. At each time point, the fluorescence intensity emitted from cells was measured. (Only for Reference)

Solubility Information

Solubility	Ethanol: 9 mg/mL (31.65 mM),Sonication is recommended. H2O: < 1 mg/mL (insoluble or slightly soluble), DMSO: 52.5 mg/mL (184.63 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: 5.2 mg/mL (18.29 mM),Suspension. *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	3.5168 mL	17.584 mL	35.1679 mL
5 mM	0.7034 mL	3.5168 mL	7.0336 mL
10 mM	0.3517 mL	1.7584 mL	3.5168 mL
50 mM	0.0703 mL	0.3517 mL	0.7034 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

Li L, et al. Fourier Transform Infrared Spectroscopy Monitoring of Dihydroartemisinin-Induced Growth Inhibition in Ovarian Cancer Cells and Normal Ovarian Surface Epithelial Cells. Cancer Manag Res. 2020 Jan 29;12:653-661.
Liu W, Zheng M, Zhang R, et al.RNF126-Mediated MRE11 Ubiquitination Activates the DNA Damage Response and Confers Resistance of Triple-Negative Breast Cancer to Radiotherapy.Advanced Science.2022: 2203884.
Qu C, et al. Dihydroartemisinin Exerts Anti-Tumor Activity by Inducing Mitochondrion and Endoplasmic Reticulum Apoptosis and Autophagic Cell Death in Human Glioblastoma Cells. Front Cell Neurosci. 2017 Sep 29;11:310.
Wang J, Zhang J, Guo Z, et al.Targeting HSP70 chaperones by rhein sensitizes liver cancer to artemisinin derivatives.Phytomedicine.2023: 155156.
Hsu Y F, Kung F L, Huang T E, et al.Anticancer Activity and Molecular Mechanisms of an Ursodeoxycholic Acid Methyl Ester-Dihydroartemisinin Hybrid via a Triazole Linkage in Hepatocellular Carcinoma Cells.Molecules.2023, 28(5): 2358.
Hu X, et al. Dihydroartemisinin is potential therapeutics for treating late-stage CRC by targeting the elevated c-Myc level. Cell Death Dis. 2021 Nov 5;12(11):1053.
Liu Y, Li H, Luo Z, et al. Artesunate, a new antimalarial clinical drug, exhibits potent anti-AML activity by targeting the ROS/Bim and TFRC/Fe2+ pathways. British Journal of Pharmacology. 2022
Li Q, et al. Dihydroartemisinin imposes positive and negative regulation on Treg and plasma cells via direct interaction and activation of c-Fos. Commun Biol. 2023 Jan 16;6(1):52.
Md. Yusuf N, Azman A N, Abdul Aziz A A, et al.Evaluation of the binding interactions between Plasmodium falciparum Kelch-13 mutant recombinant proteins with artemisinin.PloS one.2024, 19(8): e0306975.