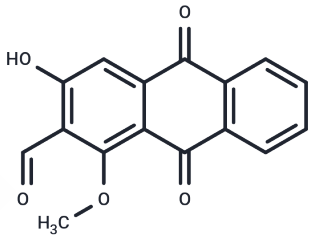
Data Sheet (Cat.No.TN1549)

TargetMol

Damnacanthal

Chemical Properties



CAS No. : 477-84-9

Formula: C16H10O5

Molecular Weight: 282.25

Storage: Store at low temperature,Keep away from direct sunlight,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	Damnacanthal is a natural anthraquinone compound with potential anticancer, anti-inflammatory, antioxidant, anti-malarial, and antiviral effects.Damnacanthal inhibits a variety of protein kinases such as LIMK1 (IC50=0.8 μM), LIMK2 (IC50=1.5 μM), and Lck (IC50=17 nM), and inhibits the growth of human hepatocellular carcinoma (SKHep-1) and human breast cancer (MCF-7) cells.
Targets(IC50)	Apoptosis,Antifungal,LIM Kinase,Src
In vitro	**Methods**: Damnacanthal (100nM, 1, 10, 100μM, 1, 2, 4 days) was used to treat HCT-116 and SW480 cells to study its antiproliferative effects on human colorectal cancer cell types. **Results**: Treatment of HCT-116 cells with Damnacanthal resulted in a significant decrease in cell proliferation at 1 μM ($P < 0.05$), 10 μM ($P < 0.01$), and 100 μM ($P < 0.01$) after 4 days of treatment; SW480 cells also showed a significant decrease in cell proliferation at 10 μM ($P < 0.05$) and 100 μM ($P < 0.001$) after 4 days of treatment with Damnacanthal; Damnacanthal had a cytotoxic effect on colorectal cancer cells in both p53 wild-type (HCT-116) and p53 mutant (SW480) cells. **Methods**: HCT-116 cells were treated with Damnacanthal (1, 10, 50 μM) to determine its possible inhibitory effects on cell cycle progression and apoptosis, and caspase 3/7 activity was measured. **Results**: Treatment of HCT-116 cells with Damnacanthal (50 μM) resulted in a significant enrichment of cells in the S/G1 and G2/G1 phases. Treatment of HCT-116 cells with Damnacanthal (10 μM) significantly increased caspase 3/7 activity. [2]
In vivo	Damnacanthal (10-100 mg/kg, oral, 10-300 minutes) treatment of mice showed a dose-dependent and significant antinociceptive effect in the formalin test, and mice treated with Damnacanthal (100 mg/kg) significantly inhibited histamine-induced paw edema [3].

Solubility Information

Solubility	DMSO: 2 mg/mL (7.09 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.543 mL	17.7148 mL	35.4296 mL
5 mM	0.7086 mL	3.543 mL	7.0859 mL
10 mM	0.3543 mL	1.7715 mL	3.543 mL
50 mM	0.0709 mL	0.3543 mL	0.7086 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

Damnacanthal inhibits IgE receptor-mediated activation of mast cells.Mol Immunol. 2015 May;65(1):86-93.
Nualsanit T, et al. Damnacanthal, a noni component, exhibits antitumorigenic activity in human colorectal cancer cells. J Nutr Biochem. 2012 Aug;23(8):915-23.
Okusada K, et al. The antinociceptive and anti-inflammatory action of the CHCl3-soluble phase and its main active component, damnacanthal, isolated from the root of Morinda citrifolia. Biol Pharm Bull. 2011;34(1):103-7.