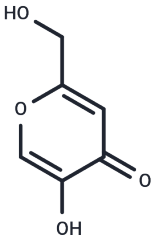
Data Sheet (Cat.No.T5889)

TargetMol

Kojic acid

Chemical Properties



CAS No. : 501-30-4

Formula: C6H6O4

Molecular Weight: 142.11

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	Kojic acid is a fungal metabolite that inhibits tyrosinase, an enzyme involved in melanin synthesis, with an IC50 value of 30.6 μM for mushroom tyrosinase.
Targets(IC50)	NF-κB,CDK,Parasite,Tyrosinase
In vitro	Kojic acid(KA) (50 μg/mL) was found to decrease the growth by 62% (IC50 34 μg/mL) and 79% (IC50 27.84 μg/mL) of promastigotes and amastigotes in vitro, respectively. KA-treated amastigotes showed the presence of vesicles bodies into the flagellar pocket, and an intense intracellular vacuolization and swelling of the mitochondrion. During the in vitro interaction of parasites and the host cell, KA reverses the superoxide anions (O2-) inhibitory mechanism promoted by parasite[1].
In vivo	4 weeks after KA-topical formulation treatment of infected animals, a healing process was observed with a high production of collagen fibers and a decrease in parasite burden. The great potential of KA as an anti-leishmanial compound[1].
Cell Research	Amazonensis promastigotes (10^6 parasites/mL) were inoculated in a 24-well plate containing RPMI medium supplemented with 10% inactivated fetal bovine serum treated with different concentrations of KA and incubated at 25 °C for 5 days without medium replacement. Every 24 h after treatment, aliquots were harvested and the effect of Kojic acid on promastigotes growth was evaluated using a Neubauer chamber and compared with untreated parasites culture. The cultures were performed in triplicate[1].
Animal Research	Animals (eight-week-old female Golden hamsters) were infected with 10^6 of L. amazonensis promastigotes/mL during the stationary growth phase with a maximum volume of 0.2 mL on both hind paws.?Animals were separated in 3 groups: untreated (n?=?5);?KA-treated 100 mg/kg/day (n?=?5) and KA vehicle (n?=?5).?KA topical formulation treatment was initiated after 5 weeks of infection.?The KA formulation and vehicle was applied topically to all lesions once daily for 4 weeks.?Control groups were also maintained in parallel.?During the treatment period, the lesion size was measured weekly using a caliper.?Width and height of both hind paws were used to calculate the lesion area (mm^2)[1].

Solubility Information

Solubility	DMSO: 158.33 mg/mL (1114.14 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	7.0368 mL	35.184 mL	70.368 mL
5 mM	1.4074 mL	7.0368 mL	14.0736 mL
10 mM	0.7037 mL	3.5184 mL	7.0368 mL
50 mM	0.1407 mL	0.7037 mL	1.4074 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

Rodrigues A P D , Farias L H S , Carvalho Antonio Sérgio C, et al. A Novel Function for Kojic Acid, a Secondary Metabolite from Aspergillus Fungi, as Antileishmanial Agent[J]. PLoS ONE, 2014, 9(3):e91259-.
Wei X , Luo D , Yan Y , et al. Kojic acid inhibits senescence of human corneal endothelial cells via NF-κB and p21 signaling pathways[J]. Experimental Eye Research, 2019, 180:174-183.