Tetrahydroxyquinone

Cat. No.: HY-B1106

CAS No.: 319-89-1

Molecular Formula: $C_6H_4O_6$

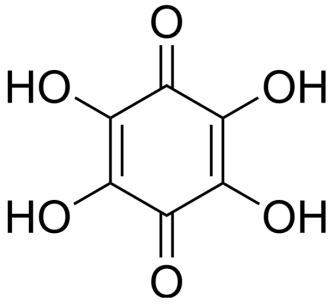
Molecular Weight: 172.09

Target: Reactive Oxygen Species; Apoptosis

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Apoptosis

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (581.09 mM; Need ultrasonic)

H_2O : 1 mg/mL (5.81 mM; ultrasonic and warming and heat to 80°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	5.8109 mL	29.0546 mL	58.1091 mL
	5 mM	1.1622 mL	5.8109 mL	11.6218 mL
	10 mM	0.5811 mL	2.9055 mL	5.8109 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (14.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (14.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tetrahydroxyquinone (Tetrahydroxy-1,4-benzoquinone), a primitive anticataract agent, is a redox active benzoquinone. Tetrahydroxyquinone can take part in a redox cycle with semiquinone radicals, leading to the formation of reactive oxygen species (ROS)[1].

In Vitro

Tetrahydroxyquinone (100-500 μM; 24 hours; HL60 cells) treatment shows cytotoxic for HL60 leukaemia cells by total protein content (IC_{50} of 20 μM), phosphatase activity (IC_{50} of 40 μM), or by MTT assay (IC_{50} of 45 μM). Tetrahydroxyquinone is an efficient inducer of ROS production in HL60 leukaemia cells[1].

Tetrahydroxyquinone efficiently activates caspase 3 in concentration in excess of 25 μM, stimulates DNA fragmentation at the same concentration and provoke phosphatidylserine exposure[1].

Tetrahydroxyquinone induces the release of cytochrome c from the mitochondria at concentration as low as 25 μM. Tetrahydroxyquinone treatment also causes increase of phosphorylation of Ser473 in protein kinase B (the Bad kinase for Ser112)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	HL60 leukaemia cells
Concentration:	100 μM, 200 μM, 300 μM, 400 μM, 500 μM
Incubation Time:	24 hours
Result:	Showed cytotoxic for HL60 leukaemia cells.

REFERENCES

[1]. Alexandre D Martins Cavagis, et al. Tetrahydroxyquinone induces apoptosis of leukemia cells through diminished survival signaling. Exp Hematol. 2006 Feb;34(2):188-96.

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