Daidzin

Cat. No.: HY-N0018

CAS No.: 552-66-9

Molecular Formula: $C_{21}H_{20}O_9$

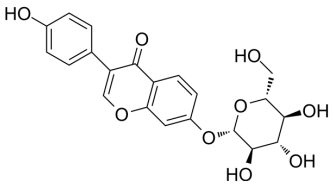
Molecular Weight: 416.38

Target: Mitochondrial Metabolism; Reverse Transcriptase; Aldehyde Dehydrogenase (ALDH)

Pathway: Metabolic Enzyme/Protease; Anti-infection

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (600.41 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.4017 mL	12.0083 mL	24.0165 mL
	5 mM	0.4803 mL	2.4017 mL	4.8033 mL
	10 mM	0.2402 mL	1.2008 mL	2.4017 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: ≥ 2.08 mg/mL (5.00 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.08 mg/mL (5.00 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.00 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Daidzin is an isoflavone with antioxidant, anticancer, and antiatherosclerotic activities. Daidzin is a potent and selective inhibitor of mitochondrial ALDH-2. Daidzin reduces ethanol consumption[1].

In Vitro

Daidzin inhibits hamster and rat ALDH-2, with K_is of 0.082 and 0.052 μM respectively[1].

Daidzin (500 μM) shows antioxidant activity, measured by its ability to inhibit cytochrome c reduction by Phorbol myristic acetate (PMA)-stimulated neutrophils[3].

Daidzin (0-30 μM, 30 min) inhibits the formation of 5-HIAA (IC_{50} value of ≈2.7 μM), and increases the amounts of 5-HIAL and 5-

	HTOL in the incubation media of hamster liver mitochondrial[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Daidzin (30 mg/kg, intragastrically) decreases blood alcohol levels (induced by 3 g ethanol/kg body weight), and shortens sleep time induced by Ethanol intoxication (7 g/kg by intubation) in fasted rats[3]. Daidzin (70 meq/hamster/day, i.p.) inhibits hamster ethanol intake by 62%[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Free Radical Bio Med. 2020 May 20;152:8-17.
- J Ethnopharmacol. 2022 Aug 13;115593.
- Mol Med Rep. 2020 Sep;22(3):2373-2385.
- Biochem Biophys Res Commun. 2023 Mar 24;657:108-118.

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REFERENCES

[1]. Keung WM, Vallee BL. Daidzin and its antidipsotropic analogs inhibit serotonin and dopamine metabolism in isolated mitochondria. Proc Natl Acad Sci U S A. 1998 Mar 3;95(5):2198-203.

[2]. Xie CI, et al. Daidzin, an antioxidant isoflavonoid, decreases blood alcohol levels and shortens sleep time induced by ethanol intoxication. Alcohol Clin Exp Res. 1994 Dec;18(6):1443-7.

[3]. Keung WM, et al. Kudzu root: an ancient Chinese source of modern antidipsotropic agents. Phytochemistry. 1998 Feb;47(4):499-506.

[4]. Keung WM, et al. Daidzin inhibits mitochondrial aldehyde dehydrogenase and suppresses ethanol intake of Syrian golden hamsters. Proc Natl Acad Sci U S A. 1997 Mar 4;94(5):1675-9.

Caution: Product has not been fully validated for medical applications. For research use only.

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