Glycitein

Cat. No.: HY-N0016

CAS No.: 40957-83-3

Molecular Formula: $C_{16}H_{12}O_5$

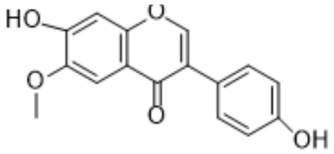
Molecular Weight: 284.26

Target: Apoptosis; Autophagy

Pathway: Apoptosis; Autophagy

Storage: 4°C, protect from light

* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (87.95 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	3.5179 mL	17.5895 mL	35.1791 mL
	5 mM	0.7036 mL	3.5179 mL	7.0358 mL
	10 mM	0.3518 mL	1.7590 mL	3.5179 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 (8.79 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.79 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Glycitein is a soy isoflavone used to study apoptosis and antioxidant[1][2][3].

In Vitro

Glycitein (0-30 μM, 4 days/20 h) inhibits the dextran-coated charcoal/fetal bovine serum (DDC-FBS)-induced growth (4 days) and DNA synthesis (20 h) of aortic smooth muscle cells (SMC) from stroke-prone spontaneously hypertensive rats (SHRSP)[3].
Glycitein (0-100 μM, 24 h) inhibits the viability in human gastric cancer cells, induces apoptosis and induces G0/G1 phase arrest[4].
Glycitein (100 μg/mL, 2 days) protects against Aβ-induced toxicity and oxidative stress in transgenic C. elegans[6].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[4]

Cell Line:	human gastric cancer cells (AGS, MKN-28, MKN-45, NCI-N87, YCC-1, YCC-6, SNU-5, SNU-

	216, SNU-484, SNU-668)
Concentration:	24 h
Incubation Time:	0-100 μM
Result:	IC_{50}: 30.98, 60.17, 35.07, 36.05, 33.11, 88.62, 97.68, 83.02, 46.87, 87.55 μM respectively.

Apoptosis Analysis[4]

Cell Line:	AGS cells
Concentration:	30 μM
Incubation Time:	3, 6, 12, and 24 hr
Result:	Increased the expression of Bax, Caspase-3 and cleaved PARP protein, and decreased levels of Bcl-2. Increased the fluorescence intensity of PI staining.

In Vivo

Glycitein (3 mg/day, oral gavage, 4 days) has weak estrogenic activity, and increases uterine weight in weaning female B6D2F1 mice[1].

Glycitein (15, 30, or 45 mg/kg in diet) in sows during late pregnancy and lactation enhances antioxidative indices, decreases the content of MDA in sow's plasma and milk, improves milk composition, and enhancesthe growth performance of the sucking piglets[5].

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

CUSTOMER VALIDATION

- Front Cell Dev Biol. 2021 Jun 11;9:684393.
- Biol Reprod. 2022 Aug 10;ioac157.

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REFERENCES

[1]. Zang YQ, et al. Glycitein induces reactive oxygen species-dependent apoptosis and G0/G1 cell cycle arrest through the MAPK/STAT3/NF-κB pathway in human gastric cancer cells. Drug Dev Res. 2019 Aug;80(5):573-584.

[2]. Hu YJ, et al. Effect of dietary supplementation with glycitein during late pregnancy and lactation on antioxidative indices and performance of primiparous sows. J Anim Sci. 2015 May;93(5):2246-54.

[3]. Gutierrez-Zepeda A, et al. Soy isoflavone glycitein protects against beta amyloid-induced toxicity and oxidative stress in transgenic Caenorhabditis elegans. BMC Neurosci. 2005 Aug 25;6:54.

[4]. Song TT, et al. Estrogenic activity of glycitein, a soy isoflavone. J Agric Food Chem. 1999 Apr;47(4):1607-10.

[5]. Yoshida H, et al. Glycitein effect on suppressing the proliferation and stimulating the differentiation of osteoblastic MC3T3-E1 cells. Biosci Biotechnol Biochem. 2001 May;65(5):1211-3.

[6]. Pan W, et al. Genistein, daidzein and glycitein inhibit growth and DNA synthesis of aortic smooth muscle cells from stroke-prone spontaneously hypertensive rats. J Nutr. 2001 Apr;131(4):1154-8.

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

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