Glabridin

Cat. No.: HY-N0393

CAS No.: 59870-68-7

Molecular Formula: $C_{20}H_{20}O_4$

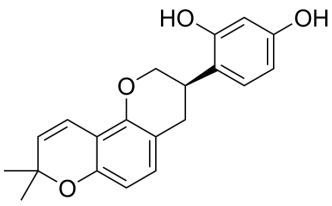
Molecular Weight: 324.37

Target: PPAR; Reactive Oxygen Species; Bacterial

Pathway: Cell Cycle/DNA Damage; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Immunology/Inflammation; NF-κB; Anti-infection

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (77.07 mM; Need ultrasonic)

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	3.0829 mL	15.4145 mL	30.8290 mL
5 mM	0.6166 mL	3.0829 mL	6.1658 mL
10 mM	0.3083 mL	1.5414 mL	3.0829 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 (7.71 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.71 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Glabridin is a natural isoflavan from Glycyrrhiza uralensis, binds to and activates PPARγ, with an EC_{50} of 6115 nM. Glabridin exhibits antioxidant, anti-bacterial, anti-nephritic, anti-diabetic, anti-fungal, antitumor, anti-inflammatory, antiosteoporotic, cardiovascular protective, neuroprotective and radical scavenging activities[1][2].

IC_{50} & Target

PPARγ
6.1 μM (EC50)

In Vitro	Glabridin binds to and activates PPARγ, with an EC_{50} of 6115 nM[1]. ?Glabridin (40, 80 μM) inhibits the proliferation of SCC-9 and SAS cell lines in a dose- and time-dependent manner after treatment for 24 and 48 h[2]. ?Glabridin (0-80 μM) also induces apoptosis, causes Sub-G1 cell cycle arrest in SCC-9 and SAS cell lines[2]. ?Glabridin (0, 20, 40, and 80 μM) dose-dependently activates caspase-3, ?8, and ?9 and increases PARP cleavage, significantly phosphorylates ERK1/2, JNK1/2, and p-38 MAPK in SCC-9 cells[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Glabridin (50 mg/kg, p.o. once daily) shows potent anti-inflammatory activity, ameliorates the inflammatory alterations induced by Dextran sodium sulphate (DSS) in rats[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Mol Med. 2023 Dec 8;29(1):167.

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REFERENCES

[1]. Rebhun JF, et al. Identification of glabridin as a bioactive compound in licorice (Glycyrrhiza glabra L.) extract that activates human peroxisome proliferator-activated receptor gamma (PPARγ). Fitoterapia. 2015 Oct;106:55-61.

[2]. Chen CT, et al. Glabridin induces apoptosis and cell cycle arrest in oral cancer cells through the JNK1/2 signaling pathway. Environ Toxicol. 2018 Jun;33(6):679-685.

[3]. El-Ashmawy NE, et al. Downregulation of iNOS and elevation of cAMP mediate the anti-inflammatory effect of glabridin in rats with ulcerative colitis. Inflammopharmacology. 2018 Apr;26(2):551-559.

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