# Isoliquiritigenin

Cat. No.:	HY-N0102			
CAS No.:	961-29-5			
Molecular Formula:	C <sub>15</sub> H <sub>12</sub> O <sub>4</sub>			
Molecular Weight:	256.25			
Target:	Aldose Reductase; Autophagy; Apoptosis; Influenza Virus			
Pathway:	Metabolic Enzyme/Protease; Autophagy; Apoptosis; Anti-infection			
Storage:	Powder	-20°C	3 years	
		4°C	2 years	
	In solvent	-80°C	1 year	
		-20°C	6 months	

## SOLVENT & SOLUBILITY

In Vitro	Ethanol : 100 mg/mL (390.24 mM; Need ultrasonic) DMSO : ≥ 100 mg/mL (390.24 mM) * "≥" means soluble, but saturation unknown.						
	Preparing Stock Solutions	Solvent Mass Concentration	1 mg	5 mg	10 mg		
		1 mM	3.9024 mL	19.5122 mL	39.0244 mL		
		5 mM	0.7805 mL	3.9024 mL	7.8049 mL		
		10 mM	0.3902 mL	1.9512 mL	3.9024 mL		
	Please refer to the solubility information to select the appropriate solvent.						
In Vivo	<ol> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution</li> <li>Add each solvent one by one: 10% EtOH &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution</li> <li>Add each solvent one by one: 10% EtOH &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution</li> <li>Add each solvent one by one: 10% EtOH &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution</li> </ol>						
	6. Add each solvent one by one: 10% EtOH >> 90% corn oil Solubility: ≥ 2.5 mg/mL (9.76 mM); Suspended solution						



**BIOLOGICAL ACTIVITY** 

Description	Isoliquiritigenin is an anti-tumor flavonoid from the root of Glycyrrhiza uralensis Fisch., which inhibits aldose reductase with an IC <sub>50</sub> of 320 nM. Isoliquiritigenin is a potent inhibitor of influenza virus replication with an EC <sub>50</sub> of 24.7 μM.
IC <sub>50</sub> & Target	IC50: 320 nM (Aldose reductase)
In Vitro	Isoliquiritigenin may prevent diabetic complications through inhibiting rat lens aldose reductase with IC <sub>50</sub> =320 nM and sorbitol accumulation in human red blood cells with IC <sub>50</sub> =2.0 μM <sup>[1]</sup> . Isoliquiritigenin (100 μM) markedly inhibits the hypoxia- induced prolonged TPS and TR90 of cardiomyocytes. Isoliquiritigenin significantly triggers AMPK Thr172 phosphorylation as compared with vehicle group. Isoliquiritigenin treatment also induces extracellular signal-regulated kinase (ERK) signaling pathway in the cardiomyocytes. Isoliquiritigenin treatment significantly decreases the intracellular ROS levels of isolated cardiomyocytes during hypoxia/reoxygenation <sup>[3]</sup> . Isoliquiritigenin not only downregulates IL-6 expression but also significantly decreases levels of phosphorylated ERK and STAT3 and can inhibit phosphorylation levels of ERK and STAT3 induced by recombinant human IL-6, which are critical signaling proteins in IL-6 signaling regulation networks <sup>[4]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Isoliquiritigenin shows concentration-dependent inhibition of the tonic contraction of mouse jejunum induced by various types of stimulants such as CCh (1 mM), KCl (60 mM) and BaCl <sub>2</sub> (0.3 mM) with IC <sub>50</sub> values of 4.96±1.97 mM, 4.03±1.34 mM and 3.70±0.58 mM, respectively <sup>[2]</sup> . Isoliquiritigenin exhibits significant anti-tumor activity in MM xenograft models and synergistically enhances the anti-myeloma activity of adriamycin <sup>[4]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### **CUSTOMER VALIDATION**

- Phytomedicine. 21 June 2022, 154262.
- Biomed Pharmacother. 2021 Dec 27;146:112594.
- Phytother Res. 2022 Jan 18.
- Cancer Cell Int. 2021 Jun 5;21(1):291.
- J Funct Foods. May 2022, 105058.

See more customer validations on www.MedChemExpress.com

#### REFERENCES

[1]. Aida K, et al. Isoliquiritigenin: a new aldose reductase inhibitor from glycyrrhizae radix. Planta Med. 1990 Jun;56(3):254-8.

[2]. Sato Y, et al. Isoliquiritigenin, one of the antispasmodic principles of Glycyrrhiza ularensis roots, acts in the lower part of intestine. Biol Pharm Bull. 2007 Jan;30(1):145-9.

[3]. Zhang X. Natural antioxidant-isoliquiritigenin ameliorates contractile dysfunction of hypoxic cardiomyocytes via AMPK signaling pathway. Mediators Inflamm. 2013;2013:390890.

[4]. Chen X, et al. Isoliquiritigenin inhibits the growth of multiple myeloma via blocking IL-6 signaling. J Mol Med (Berl). 2012 Nov;90(11):1311-9.

[5]. Traboulsi H, et al. The Flavonoid Isoliquiritigenin Reduces Lung Inflammation and Mouse Morbidity during Influenza Virus Infection. Antimicrob Agents Chemother. 2015 Oct;59(10):6317-27.

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

 Tel: 609-228-6898
 Fax: 609-228-5909
 E-mail: tech@MedChemExpress.com

 Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA