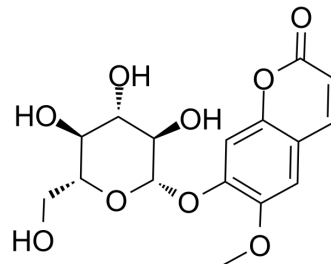


Scopolin

Cat. No.:	HY-N0341
CAS No.:	531-44-2
Molecular Formula:	C ₁₆ H ₁₈ O ₉
Molecular Weight:	354.31
Target:	Sirtuin
Pathway:	Cell Cycle/DNA Damage; Epigenetics
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (282.24 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	2.8224 mL	14.1119 mL	28.2239 mL
		5 mM	0.5645 mL	2.8224 mL	5.6448 mL
		10 mM	0.2822 mL	1.4112 mL	2.8224 mL
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (7.06 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (7.06 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (7.06 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Scopolin is a coumarin isolated from Arabidopsis thaliana (Arabidopsis) roots ^[1] . Scopolin attenuated hepatic steatosis through activation of SIRT1-mediated signaling cascades ^[2] .
IC ₅₀ & Target	SIRT1
In Vitro	Scopolin (100 μM, 24 h) inhibits oleic acid-induced lipid accumulation by increasing SIRT1 activity in HepG2 cells ^[2] . Scopolin (10 μM, 5 days) inhibits RANKL induced differentiation of preosteoclastic RAW 264.7 cells into osteoclasts ^[5] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	<p>Scopolin (0.02% (w/w) in HFD diet, 8 weeks) decreases the body weight gain, and alleviates hepatic steatosis in HFD-fed mice^[2].</p> <p>Scopolin (2 μmol, icv) increases the extracellular acetylcholine concentration in rat brain to about 300% compared to basal release^[3].</p> <p>Scopolin (50, 100 mg/kg, i.p.) inhibits adjuvant-induced arthritis by inhibiting inflammation and angiogenesis in rats^[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	
	Animal Model:	HFD-fed C57BL/6 N mice ^[2]
	Dosage:	0.02% (w/w) in HFD diet (equivalent to 20 mg/kg body weight)
	Administration:	Supplemented in diet, 8 weeks
	Result:	<p>Reversed the HFD-induced hepatic TG, cholesterol, and fatty acid accumulation by 35%, 49%, and 35%, respectively.</p> <p>Reversed the HFD-induced decrease in plasma adiponectin levels by 76%, and reduced the increased plasma MCP-1, TNFα, and IL-6 levels.</p> <p>Restored HFD-induced downregulation of SIRT1 activity.</p>
	Animal Model:	Adjuvant-induced arthritis (AIA) rats ^[4]
	Dosage:	50, 100 mg/kg
	Administration:	i.p.
	Result:	<p>Inhibited inoculated and non-inoculated paw swelling and articular index scores.</p> <p>Reduced new blood vessels, and reduced IL-6, VEGF and FGF-2 expressions in rat synovial tissues.</p>

REFERENCES

- [1]. Rollinger JM, et al. Acetylcholinesterase inhibitory activity of scopolin and scopoletin discovered by virtual screening of natural products. *J Med Chem.* 2004 Dec 2;47(25):6248-54.
- [2]. Pan R, et al. Scopolin isolated from *Erycibe obtusifolia* Benth stems suppresses adjuvant-induced rat arthritis by inhibiting inflammation and angiogenesis. *Int Immunopharmacol.* 2009 Jul;9(7-8):859-69.
- [3]. Lee SH, et al. Scopoletin and scopolin isolated from *Artemisia iwayomogi* suppress differentiation of osteoclastic macrophage RAW 264.7 cells by scavenging reactive oxygen species. *J Nat Prod.* 2013 Apr 26;76(4):615-20.
- [4]. Siwinska J, et al. Identification of QTLs affecting scopolin and scopoletin biosynthesis in *Arabidopsis thaliana*. *BMC Plant Biol.* 2014 Oct 18;14:280.
- [5]. Yoo A, et al. Scopolin ameliorates high-fat diet induced hepatic steatosis in mice: potential involvement of SIRT1-mediated signaling cascades in the liver. *Sci Rep.* 2017 May 22;7(1):2251.

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

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