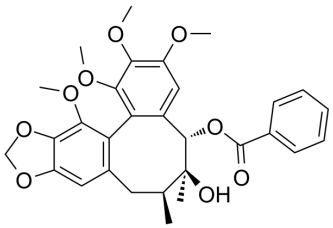
Schisantherin A

Cat. No.:	HY-N0694		
CAS No.:	58546-56-8		
Molecular Formula:	$C_{30}H_{32}O_9$		
Molecular Weight:	536.57		
Target:	NF-κB		
Pathway:	NF-κB		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (186.37 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.8637 mL	9.3184 mL	18.6369 mL
5 mM	0.3727 mL	1.8637 mL	3.7274 mL
10 mM	0.1864 mL	0.9318 mL	1.8637 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 (4.66 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.66 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Schisantherin A is a dibenzocyclooctadiene lignan. Schisantherin A inhibits p65-NF-κB translocation into the nucleus by IκBα degradation.

IC_{50} & Target

p65

In Vitro

The concentrations of TNF-α and IL-6 in the supernatant of cells pretreated with 2.5 or 25 mg/L of Schisantherin A are significantly decreased compared to the LPS control group ($p<0.05$, $p<0.01$). The potential cytotoxicity of Schisantherin A is evaluated by the MTT assay after incubating cells for 24 h in the absence or presence of LPS, result shows cell viabilities are not affected by the cytokines at concentrations used (0.5, 2.5, 25 mg/L). RAW 264.7 murine macrophage cells are pre-

	incubated with Schisantherin A for 1 h and then stimulated with 1 mg/L LPS for 12 h. Both LPS and samples are untreated in control group. After the cell culture media are collected, nitrite and PGE_2 levels are determined, and Schisantherin A is found to reduce NO and PGE_2 production in a dose-dependent manner[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Schisantherin A, a dibenzocyclooctadiene lignan isolated from the fruit of Schisandra sphenanthera, has been reported to possess varied beneficial pharmacological effects. Schisantherin A protects lipopolysaccharide-induced acute respiratory distress syndrome in mice through inhibiting NF-κB and MAPKs signaling pathways. Pretreatment with Schisantherin A markedly ameliorates LPS-induced histopathologic changes and decreases the levels of TNF-α, IL-6 and IL-1β in the BALF. In addition, the phosphorylation of NF-κB p65, IκB-α, JNK, ERK and p38 induced by LPS are suppressed by Schisantherin A. The lung wet/dry weight ratio is evaluated at 7 h after the intranasal instillation of LPS. The results show that there are no differences between control group and Schisantherin A (40 mg/kg) group ($p>0.05$). LPS causes a significant increase in lung wet/dry weight ratio ($p<0.01$) compared with the control group. Schisantherin A dose-dependently decreases the lung wet/dry weight ratio ($p<0.05$) compared to those in the LPS group[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	The MTT assay is performed to measure cell viability. RAW 264.7 cells are mechanically scraped, seeded in 96-well plates at 4×10^5 cells/mL, and incubated in a 37°C, 5% CO_2 incubator overnight. After 24 h, cells, treated with 50 μL of different concentrations of Schisantherin A (0-25 mg/L) for 1 h are then stimulated with 50 μL LPS for 18 h. Subsequently, 20 μL of 5 mg/mL MTT in FBS-free medium is added to each well, and the cells are incubated for 4 h. MTT is removed and resolved with 150 μL/well DMSO. The optical density is measured at 570 nm using a microplate reader. Concentrations are determined for three wells of each sample, and this experiment done in triplicate[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice[1] Male BALB/c mice, 6-8 weeks old, are used. All mice are randomly divided into six groups: control group, Schisantherin A (40 mg/kg) group, LPS group, Schisantherin A (10, 20 and 40 mg/kg)+LPS group, and Dexamethasone (DEX)+LPS group. DEX+LPS group is used as a positive control. Schisantherin A and DEX (5 mg/kg) are conducted intraperitoneally. Mice of control and LPS groups are given an equal volume of PBS. One hour later, after slightly anesthetized with an inhalation of diethyl ether, mice are instilled intranasally (i.n.) 10 μg LPS in 50 μL PBS to induce lung injury. Control mice are given 50 μL PBS instead of LPS. All mice are alive after 7 h of LPS treatment[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Life Sci. 2020 Oct 1;258:118161.

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REFERENCES

[1]. Ci X, et al. Schisantherin A exhibits anti-inflammatory properties by down-regulating NF-kappaB and MAPK signaling pathways in lipopolysaccharide-treated RAW 264.7 cells. Inflammation. 2010 Apr;33(2):126-36.

[2]. Zhou E, et al. Schisantherin A protects lipopolysaccharide-induced acute respiratory distress syndrome in mice through inhibiting NF-κB and MAPKs signaling pathways. Int Immunopharmacol. 2014 Sep;22(1):133-40.

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

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