Schisandrin A

Cat. No.: HY-N0693

CAS No.: 61281-38-7

Molecular Formula: $C_{24}H_{32}O_6$

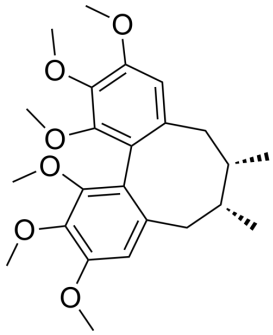
Molecular Weight: 416.51

Target: Cytochrome P450; Autophagy; Virus Protease

Pathway: Metabolic Enzyme/Protease; Autophagy; Anti-infection

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 : 50 mg/mL (120.05 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4009 mL	12.0045 mL	24.0090 mL
5 mM	0.4802 mL	2.4009 mL	4.8018 mL
10 mM	0.2401 mL	1.2005 mL	2.4009 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 (6.00 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (6.00 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.00 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Schisandrin A inhibits CYP3A activity with an IC_{50} of 6.60 μM and K_i of 5.83 μM, respectively.

IC_{50} & Target

CYP3A 6.6 μM (IC_{50})	Autophagy

In Vitro

Schisandrin A (Sch A) strongly inhibits microsomal midazolam 1-hydroxylation catalyzed by CYP3A, with an IC_{50} of 6.60 μM. The recovery of enzyme activity in the absence or presence of Schisandrin A is shown in dilution assay plots. The K_i value for

	Schisandrin A is obtained from the Dixon plots and is 5.83 μM. The inactivation of rat liver microsomal midazolam 1-hydroxylation activity by Schisandrin A in the presence of NADPH is found to be time- and concentration-dependent. The K_{inact} and K_i are estimated to be 0.134/min and 4.51 μM, respectively for Schisandrin A[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Schisandrin A (SchA) significantly inhibits CYP3A activity in rat hepatic microsomes and V_{max} value of each group in a concentration-dependent manner. The double-reciprocal plots and the secondary plot show that Schisandrin A inhibits CYP3A activity, with an apparent K_i value of 30.67 mg/kg. In each Schisandrin A-treated group, Schisandrin A also significantly decreases 1-hydroxymidazolam plasma concentrations compared with the negative group (to levels similar to the positive group)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [1]	For the inactivation of CYP3A4 activity, microsomes are preincubated with inhibitors (Schisandrin A, 2.4 μM, 7.2 μM and 12.0 μM; or Sch B) at 37°C for up to 15 min in the presence of NADPH. Reactions are initiated with the addition of substrate midazolam and incubated at 37°C for 10 min. The enzyme inactivation is analyzed. Duplicates are prepared and tested[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Rats[2] Healthy male Sprague-Dawley rats, weighing 250-280 g and 2-3 months of age, are used. The rats are randomly divided into five groups with 16 rats in each group. The animals are administered once daily for three consecutive days. The Schisandrin A-treated groups are administered intragastrically with doses of 32, 16 or 8 mg/kg of Schisandrin A (physiological saline as vehicle), and the rats are similarly administered with equal volume of vehicle in the negative control group and Ketoconazole (75 mg/kg) in the positive control group. All animals are allowed free access to food but are fasted overnight before scarification to reduce the intestinal content, and each group is randomly divided into two parts with eight rats in each part[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Prolif. 2020 Oct;53(10):e12882.
- Front Cell Dev Biol. 2021 Nov 10;9:763864.
- Eur J Pharmacol. 2019 Jul 15;855:10-19.
- Sci Rep. 2019 Dec 16;9(1):19173.
- Eur J Med Res. 2023 Jul 3;28(1):217.

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REFERENCES

[1]. Li WL, et al. Inhibitory effects of Schisandrin A and Schisandrin B on CYP3A activity. Methods Find Exp Clin Pharmacol. 2010 Apr;32(3):163-9.

[2]. Li WL, et al. Inhibitory effects of continuous ingestion of Schisandrin A on CYP3A in the rat. Basic Clin Pharmacol Toxicol. 2012 Feb;110(2):187-92.

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

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