Sinensetin

Cat. No.: HY-N0297

CAS No.: 2306-27-6

Molecular Formula: $C_{20}H_{20}O_7$

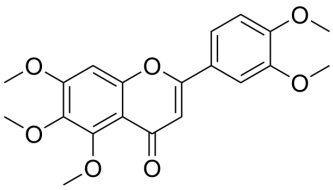
Molecular Weight: 372.37

Target: PGE synthase; TNF Receptor; PGE synthase

Pathway: Immunology/Inflammation; Apoptosis

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 : 18.18 mg/mL (48.82 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.6855 mL	13.4275 mL	26.8550 mL
	5 mM	0.5371 mL	2.6855 mL	5.3710 mL
	10 mM	0.2686 mL	1.3428 mL	2.6855 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: ≥ 1.25 mg/mL (3.36 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (3.36 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Sinensetin is a methylated flavonoid found in fruits that has strong anti-vascular and anti-inflammatory properties.

In Vitro

Sinensetin (40 μM, 2 d) enhances adipogenesis of 3T3-L1 preadipocytes by up-regulating the adipogenic transcription factors in the absence of IBMX[1].

Sinensetin (12-200 μM, 24-48 h) shows significant cytotoxic effects on Jurkat and CCRF-CEM cells in a dose-dependent and time-dependent manner[4].

Sinensetin (100 μM, 48h) induces the sub-G1 phase and apoptosis in Jurkat cells[4].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[1]

Cell Line:	3T3-L1
Concentration:	2, 10, 40 μM
Incubation Time:	24 d
Result:	Increased cellular lipid accumulation and triglyceride content in a dose-dependent manner. Increased the expression of PPARγ1, PPARγ2, C/EBPα, and aP2.

Cell Proliferation Assay[4]

Cell Line:	CCRF-CEM cell, Jurkat
Concentration:	6.25–100 μM
Incubation Time:	24 or 48 h
Result:	Inhibited cell viability with different concentrations of sinensetin for 24 h and 48 h.

Apoptosis Analysis[4]

Cell Line:	Jurkat cell
Concentration:	50 μM, 100 μM
Incubation Time:	24 h and 48 h
Result:	Induced a sub-G1 population and apoptotic.

In Vivo

Sinensetin (50 mg/kg, single dose, i.p.) has anti-inflammatory effects on carrageenan (HY-125474) induced paw inflammation in the mouse[5].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Carrageenan-induced paw edema in male C57BL/6 mice[5]
Dosage:	50 mg/kg, single dose
Administration:	Intraperitoneal injection (i.p.)
Result:	Sloewd the volume increased of the carrageenan-treated paw at 6 h.

CUSTOMER VALIDATION

- Acta Pharm Sin B. 2021 Jan;11(1):143-155.
- Food Funct. 12th August 2022.
- Nutrients. 2020 Aug 15;12(8):2462.
- Front Pharmacol. 16 July 2021.
- J Biochem Mol Toxicol. 2024 Nov;38(11):e70024.

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REFERENCES

[1]. Kok-Tong Tan, et al. Sinensetin induces apoptosis and autophagy in the treatment of human T-cell lymphoma. Anticancer Drugs. 2019, 30, 5.

[2]. Mirka Laavola, et al. Flavonoids eupatorin and sinensetin present in Orthosiphon stamineus leaves inhibit inflammatory gene expression and STAT1 activation. Planta Med. 2012, 78, 8.

[3]. Kang SI et al. Sinensetin enhances adipogenesis and lipolysis by increasing cyclic adenosine monophosphate levels in 3T3-L1 adipocytes. Biol Pharm Bull. 2015;38(4):552-8.

[4]. Shin HS et al. Sinensetin attenuates LPS-induced inflammation by regulating the protein level of IκB-α.Biosci Biotechnol Biochem. 2012;76(4):847-9.

[5]. Lam IK et al. In vitro and in vivo structure and activity relationship analysis of polymethoxylated flavonoids: identifying sinensetin as a novel antiangiogenesis agent. Mol Nutr Food Res. 2012 Jun;56(6):945-56.

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