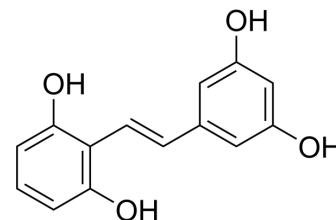


Gnetol

Cat. No.:	HY-126052
CAS No.:	86361-55-9
Molecular Formula:	C ₁₄ H ₁₂ O ₄
Molecular Weight:	244.24
Target:	Tyrosinase; COX; HDAC
Pathway:	Metabolic Enzyme/Protease; Immunology/Inflammation; 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 (409.43 mM; Need ultrasonic)					
		Solvent Concentration	Mass			
	Preparing Stock Solutions			1 mg	5 mg	10 mg
		1 mM		4.0943 mL	20.4717 mL	40.9433 mL
		5 mM		0.8189 mL	4.0943 mL	8.1887 mL
	10 mM		0.4094 mL	2.0472 mL	4.0943 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 (10.24 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (10.24 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (10.24 mM); Clear solution 					

BIOLOGICAL ACTIVITY

Description	Gnetol is a phenolic compound isolated from the root of Gnetum montanum . Gnetol potently inhibits COX-1 (IC ₅₀ of 0.78 μ M) and HDAC. Gnetol is a potent tyrosinase inhibitor with an IC ₅₀ of 4.5 μ M for murine tyrosinase and suppresses melanin biosynthesis. Gnetol has antioxidant, antiproliferative, anticancer and hepatoprotective activity. Gnetol also possesses concentration-dependent α-Amylase, α-glucosidase, and adipogenesis activities ^{[1][2][3]} .		
IC ₅₀ & Target	COX-1 0.78 μ M (IC ₅₀)	Tyrosinase 4.5 μ M (IC ₅₀)	HDAC

<p>In Vitro</p>	<p>The antiproliferative activities of Gnetol are tested in HCT-116, Hep-G2, MDA-MB-231, and PC-3 cell lines by measuring cell viability after treatment with 4.1 μM, 40.9 μM, 204.7 μM, 409.4 μM, and 1023.6 μM. Gnetol shows concentration-dependent reductions in cell viability in cancer cell lines with greatest activity in colorectal cancer^[1].</p> <p>Gnetol at 200 μg/mL significantly offers the highest protection of 54.3% against the toxicant. A lower dose of Gnetol (50 μg/mL) also shields the cell line from the toxic effects of CCl₄^[3].</p> <p>The ligand molecule TGF-β and PPARα protein show that Gnetol has the binding affinity of 7.0 and 8.4, respectively^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
<p>In Vivo</p>	<p>Male Sprague-Dawley rats were cannulated and dosed either intravenously with Gnetol (10 μg/kg) or orally (100 mg/kg). After oral and intravenous administration, Gnetol is detected in both serum and urine as the parent compound and as a glucuronidated metabolite. The bioavailability of Gnetol is determined to be 6%. Gnetol is rapidly glucuronidated and is excreted in urine and via nonrenal routes^[1].</p> <p>Pretreatment of Male NIH Swiss mice (20-35 g) with Gnetol (50mg/kg, SC) is able to increase the latency period to response in analgesia models^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

REFERENCES

- [1]. Remsberg CM, et al. Preclinical Pharmacokinetics and Pharmacodynamics and Content Analysis of Gnetol in Foodstuffs. *Phytother Res.* 2015 Aug;29(8):1168-79.
- [2]. Ohguchi K, et al. Gnetol as a potent tyrosinase inhibitor from genus Gnetum. *Biosci Biotechnol Biochem.* 2003 Mar;67(3):663-5.
- [3]. Jinadatta P, et al. In silico, in vitro: antioxidant and antihepatotoxic activity of gnetol from Gnetum ula Brongn. *Bioimpacts.* 2019;9(4):239-249.

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

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