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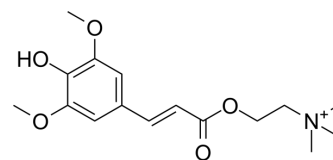
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Sinapine

Cat. No.:	HY-N5077
CAS No.:	18696-26-9
Molecular Formula:	C ₁₆ H ₂₄ NO ₅ ⁺
Molecular Weight:	310.36
Target:	P-glycoprotein; Cholinesterase (ChE)
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (322.21 mM; Need ultrasonic)					
	Preparing Stock Solutions	Solvent Concentration	Mass	1 mg	5 mg	10 mg
		1 mM	3.2221 mL	16.1103 mL	32.2206 mL	
		5 mM	0.6444 mL	3.2221 mL	6.4441 mL	
		10 mM	0.3222 mL	1.6110 mL	3.2221 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: ≥ 2.08 mg/mL (6.70 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (6.70 mM); Clear solution					

BIOLOGICAL ACTIVITY

Description	Sinapine is an alkaloid isolated from seeds of the cruciferous species. Sinapine exhibits anti-inflammatory, anti-oxidant, anti-tumor, anti-angiogenic and radio-protective effects. Sinapine is also an acetylcholinesterase (AChE) inhibitor and can be used for the research of Alzheimer's disease, ataxia, myasthenia gravis, and Parkinson's disease ^{[1][2][3][4]} .
IC ₅₀ & Target	AChE
In Vitro	Sinapine (6 or 60 μM; 1 h) counteracts H ₂ O ₂ and antimycin A-induced mitochondrial oxidative stress in cardiomyocytes ^[1] . Sinapine (10-200 μM; 24 h) inhibits the proliferation of Caco-2 cells in a dose-dependent manner, and has relatively low toxicity ^[3] . Sinapine (10-200 μM; 24 h) promotes doxorubicin accumulation in Caco-2 cell by inducing P-glycoprotein (P-gp) decrease ^[3] . Sinapine (10-200 μM; 24 h) significantly reduces phosphorylation of FRS2α, ERK1/2 ^[3] .

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

In Vivo

Sinapine reduces non-alcoholic fatty liver disease in mice by modulating the composition of the gut microbiota^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Cancer. 2022 Jan 24;13(4):1229-1240.
- Cancer Biol Ther. 2023 Dec 31;24(1):2249170.

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REFERENCES

- [1]. Guo Y, et al. Sinapine as an active compound for inhibiting the proliferation of Caco-2 cells via downregulation of P-glycoprotein. Food Chem Toxicol. 2014 May;67:187-92.
- [2]. Boulghobra D, et, al. Sinapine, but not sinapic acid, counteracts mitochondrial oxidative stress in cardiomyocytes. Redox Biol. 2020 Jul;34:101554.
- [3]. Li Y, et, al. Sinapine reduces non-alcoholic fatty liver disease in mice by modulating the composition of the gut microbiota. Food Funct. 2019 Jun 19;10(6):3637-3649.
- [4]. Yates K, et, al. Determination of sinapine in rapeseed pomace extract: Its antioxidant and acetylcholinesterase inhibition properties. Food Chem. 2019 Mar 15;276:768-775.
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Caution: Product has not been fully validated for medical applications. For research use only.

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