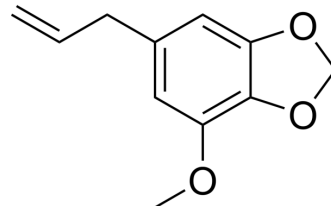


## Myristicin

<b>Cat. No.:</b>	HY-N2510
<b>CAS No.:</b>	607-91-0
<b>Molecular Formula:</b>	C <sub>11</sub> H <sub>12</sub> O <sub>3</sub>
<b>Molecular Weight:</b>	192.21
<b>Target:</b>	5-HT Receptor; EGFR; ERK; Apoptosis; Bacterial
<b>Pathway:</b>	GPCR/G Protein; Neuronal Signaling; JAK/STAT Signaling; Protein Tyrosine Kinase/RTK; MAPK/ERK Pathway; Stem Cell/Wnt; Apoptosis; Anti-infection
<b>Storage:</b>	4°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (520.26 mM; Need ultrasonic)					
	<b>Preparing Stock Solutions</b>	<b>Solvent Concentration</b>	<b>Mass</b>	<b>1 mg</b>	<b>5 mg</b>	<b>10 mg</b>
		<b>1 mM</b>		5.2026 mL	26.0132 mL	52.0264 mL
		<b>5 mM</b>		1.0405 mL	5.2026 mL	10.4053 mL
		<b>10 mM</b>		0.5203 mL	2.6013 mL	5.2026 mL
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (13.01 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (13.01 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (13.01 mM); Clear solution					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Myristicine is an orally bioavailable serotonin receptor antagonist and weak monoamine oxidase (MAO) inhibitor. Myristicine also exerts anti-cancer effects on gastric cancer cells by inhibiting the EGFR/ERK signaling pathway. Myristicine is the main component of nutmeg essential oil and has anti-cancer, anti-proliferative, antibacterial, anti-inflammatory and apoptosis-inducing effects. Myristicine abuse can produce hallucinogenic effects, organ damage, etc <sup>[1][2][3][4]</sup> .	
<b>IC<sub>50</sub> &amp; Target</b>	EGFR	ERK
<b>In Vitro</b>	Myristicin (7.8-31.25 μM; 48 h) can delay the proliferation of gastric cancer cells and induce endoplasmic reticulum (ER)	

stress and apoptosis; at the same time, Myristicin reduces the expression of cell cycle proteins, increases the expression of Bax, and activates caspase enzyme, and enhances the release of cytochrome C and mitochondrial ROS levels [3].

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

#### Western Blot Analysis<sup>[3]</sup>

Cell Line:	Human gastric cancer cells
Concentration:	7.8125, 15.625, and 31.25 $\mu$ M
Incubation Time:	48 h
Result:	Significantly decreased expression of cyclins, increased Bax expression.

#### In Vivo

In animal models, Myristicin can inhibit the growth of gastric cancer cells and the EGFR/ERK signaling pathway<sup>[3]</sup>.

Myristicin (200 mg/kg; po; single dose) treated 6 hours in advance, on acetic acid (AA)-induced small Mouse experimental colitis model has preventive and protective effect<sup>[4]</sup>.

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

Animal Model:	Experimental colitis model in mice <sup>[4]</sup>
Dosage:	200 mg/kg
Administration:	po; single dose, 6 h before Rectal AA (colitis inducer) instillation
Result:	Reduced cellular oxidative stress induced by AA, and relieved the histopathological colonic damage, alleviated inflammation in the AA-induced colitis.

## REFERENCES

- [1]. Kalbhen DA, et al. Nutmeg as a narcotic. A contribution to the chemistry and pharmacology of nutmeg (*Myristica fragrans*). *Angew Chem Int Ed Engl*. 1971 Jun;10(6):370-4.
- [2]. Dawidowicz AL, et al. Simple and rapid determination of myristicin in human serum. *Forensic Toxicol*. 2013 Jan;31(1):119-123. Epub 2012 Aug 15.
- [3]. Badr G, Elsayy H, Amalki M A, et al. Protective effects of myristicin against ulcerative colitis induced by acetic acid in male mice[J]. *Food and Agricultural Immunology*, 2020, 31(1): 435-446.
- [4]. Song J, et al. Myristicin Suppresses Gastric Cancer Growth via Targeting the EGFR/ ERK Signaling Pathway. *Curr Mol Pharmacol*. 2023;16(7):712-724.

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

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