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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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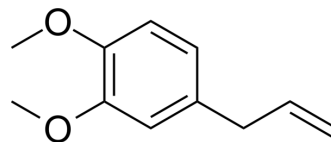
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Methyl Eugenol

Cat. No.:	HY-N6996
CAS No.:	93-15-2
Molecular Formula:	C ₁₁ H ₁₄ O ₂
Molecular Weight:	178
Target:	Autophagy; PI3K; mTOR; Akt
Pathway:	Autophagy; PI3K/Akt/mTOR
Storage:	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (561.80 mM; Need ultrasonic)																					
	H ₂ O : < 0.1 mg/mL (insoluble)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>5.6180 mL</td> <td>28.0899 mL</td> <td>56.1798 mL</td> </tr> <tr> <td>5 mM</td> <td>1.1236 mL</td> <td>5.6180 mL</td> <td>11.2360 mL</td> </tr> <tr> <td>10 mM</td> <td>0.5618 mL</td> <td>2.8090 mL</td> <td>5.6180 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	5.6180 mL	28.0899 mL	56.1798 mL	5 mM	1.1236 mL	5.6180 mL	11.2360 mL	10 mM	0.5618 mL	2.8090 mL	5.6180 mL
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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 (14.04 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (14.04 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (14.04 mM); Clear solution 																					

BIOLOGICAL ACTIVITY

Description	Methyl Eugenol is a bait that has oral activity against oriental fruit fly (Hendel). Methyl Eugenol has anti-cancer and anti-inflammatory activities. Methyl Eugenol can induce Autophagy in cells. Methyl Eugenol can be used in the study of intestinal ischemia/reperfusion injury ^{[1][2][3]} .
In Vitro	Methyl Eugenol (25% (2 mL)-100% (8 mL)) is able to trap the orange fly in a dose-dependent manner ^[1] . Methyl Eugenol (3.12-200 μM; 48 h) can inhibit cell proliferation (IC ₅₀ =50 μM) in human retinoblastoma RB355 cells by inducing (50 μM; 24 h) autophagy and inhibiting (50 μM; 48 h) the PI3K/mTOR/Akt signaling pathway in cells ^[2] .

Methyl Eugenol (25-100 μM) can arrest the cell cycle of RB355 cells at the G2/M phase^[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Autophagy Assay^[2]

Cell Line:	RB355 (Human retinoblastoma cells)
Concentration:	50 μM
Incubation Time:	24 h
Result:	Significantly increased the expression of LC3-II in a dose-dependent manner and decreased the expression of p62. Weakened the inhibitory effect of the autophagy inhibitor gastrostatin.

Western Blot Analysis^[2]

Cell Line:	RB355 (Human retinoblastoma cells)
Concentration:	50 μM
Incubation Time:	48 h
Result:	Inhibited the PI3K/mTOR/Akt signaling pathway. Down-regulated the expression of m-TOR and pm-TOR proteins in a concentration-dependent manner. Down-regulated the expression of PI3K/Akt protein.

In Vivo

Methyl Eugenol (100 mg/kg; Oral intubation; Once daily for 30 days) has anti-inflammatory effects in Wistar rats with intestinal ischemia/reperfusion injury (I/R), and can alleviate intestinal ischemia/reperfusion injury^[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult Wistar rats (<i>Rattus norvegicus</i>) model of intestinal ischemia/reperfusion injury ^[3]
Dosage:	100 mg/kg
Administration:	Oral intubation; Once daily for 30 days. Before underwent laparotomy with SMA occlusion 30 min of ischemia followed by 60 min of reperfusion.
Result:	Significantly decreased the elevated LDH, MDA, and NO levels and concurrently increased the antioxidant biomarkers under test in the intestinal tissue. Significantly downregulate the mRNA expression levels of TNF- α and IL-6.

REFERENCES

[1]. Vargas, R I et al. Methyl eugenol and cue-lure traps for suppression of male oriental fruit flies and melon flies (Diptera: Tephritidae) in Hawaii: effects of lure mixtures and weathering. *Journal of economic entomology* vol. 93,1 (2000): 81-7.

[2]. Yin, Li et al. Methyl eugenol induces potent anticancer effects in RB355 human retinoblastoma cells by inducing autophagy, cell cycle arrest and inhibition of PI3K/mTOR/Akt signalling pathway. *Journal of B.U.ON. : official journal of the Balkan Union of Oncology* vol. 23,4 (2018): 1174-1178.

[3]. Saleh, Hanan, et al. Mechanism underlying methyl eugenol attenuation of intestinal ischemia/reperfusion injury. *Applied physiology, nutrition, and metabolism = Physiologie appliquee, nutrition et metabolisme* vol. 42,10 (2017): 1097-1105.

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

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