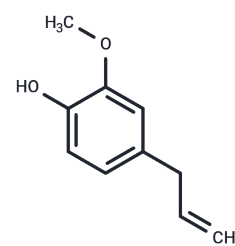


## Eugenol

## Chemical Properties

CAS No. :	97-53-0
Formula:	C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>
Molecular Weight:	164.20
Storage:	Powder: -20°C for 3 years   In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Eugenol (Allylguaiacol) is a Standardized Chemical Allergen. The physiologic effect of eugenol is by means of Increased Histamine Release and Cell-mediated Immunity.
Targets(IC50)	Apoptosis, Ferroptosis, Reactive Oxygen Species, Antibacterial, Parasite, ROS
In vitro	Eugenol has antiproliferative effects in diverse cancer cell lines as well as in B16 melanoma xenograft model. Eugenol induces apoptosis in various cancer cells, including mast cells, melanoma cells and HL-60 leukemia cells. Eugenol at low dose (2 μM) has specific toxicity against different breast cancer cells. This killing effect is mediated mainly through inducing the internal apoptotic pathway and strong down-regulation of E2F1 and its downstream antiapoptosis target survivin, independently of the status of p53 and ERα. Eugenol inhibits also several other breast cancer related oncogenes, such as NF-κB and cyclin D1. Moreover, eugenol up-regulates the versatile cyclin-dependent kinase inhibitor p21WAF1 protein, and inhibits the proliferation of breast cancer cells in a p53-independent manner[2].
In vivo	Eugenol inhibits the proliferation of breast cancer cells in vivo as well. The inhibitory effect of eugenol on onco-proteins is also observed in vivo in tumor xenografts[2]. Eugenol (0.2, 1.0, 5.0 or 25 mg/kg) when given orally at three different times in relation to the time of CCl <sub>4</sub> dosing (i.p administration of 0.4 mg/kg), i.e. prior to (-1 hr), along with (0 hr) or after (+ 3 hrs), prevents significantly the rise in SGOT (Serum glutamic-oxaloacetic transaminase) activity, lipid peroxidation as well as liver necrosis. The protective effect is more evident at 1 mg and 5 mg eugenol doses than at 0.2 and 25 mg does. However, the decrease in microsomal G-6-pase activity by CCl <sub>4</sub> treatment is not prevented by eugenol suggesting that the damage to endoplasmic reticulum is not protected[3].
Cell Research	Cells are seeded into 96-well plates and incubated overnight. The medium is replaced with fresh one containing the desired concentrations of eugenol. After 20 hrs, 10 μl of the WST-1 reagent is added to each well and the plates are incubated for 4 hrs at 37°C. The amount of formazan is quantified using ELISA reader at 450 nm of absorbance. (Only for Reference)

## Solubility Information

## A DRUG SCREENING EXPERT

Solubility	DMSO: 240.00 mg/mL (1461.63 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 5.00 mg/mL (30.45 mM),Sonication is recommended. <i>Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.</i>

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	6.0901 mL	30.4507 mL	60.9013 mL
5 mM	1.218 mL	6.0901 mL	12.1803 mL
10 mM	0.609 mL	3.0451 mL	6.0901 mL
50 mM	0.1218 mL	0.609 mL	1.218 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

Nagababu E, et al. Free Radic Res. 1995, 23(6):617-27.

Wu Z, Wang Y, Yan G, et al. Eugenol protects chondrocytes and articular cartilage by downregulating the JAK3/STAT4 signaling pathway. Journal of Orthopaedic Research. 2022;1-12.

Al-Sharif I, et al. BMC Cancer. 2013, 13:600.

Nagababu E, et al. Methods Mol Biol. 2010, 610:165-80.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

This product is for Research Use Only· Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E\_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481