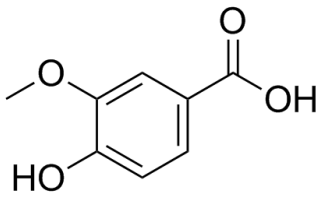
Vanillic acid

Cat. No.:	HY-N0708		
CAS No.:	121-34-6		
Molecular Formula:	$C_8H_8O_4$		
Molecular Weight:	168.15		
Target:	NF-κB		
Pathway:	NF-κB		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (594.71 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	5.9471 mL	29.7354 mL	59.4707 mL
	5 mM	1.1894 mL	5.9471 mL	11.8941 mL
	10 mM	0.5947 mL	2.9735 mL	5.9471 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: **10% DMSO >> 90% corn oil**
   Solubility: ≥ 2.5 mg/mL (14.87 mM); Clear solution
2. Add each solvent one by one: **10% DMSO >> 90% (20% SBE-β-CD in saline)**
   Solubility: ≥ 2.5 mg/mL (14.87 mM); Clear solution
3. Add each solvent one by one: **10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline**
   Solubility: ≥ 2.5 mg/mL (14.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Vanillic acid is a flavoring agent found in edible plants and fruits. Vanillic acid inhibits **NF-κB** activation. Anti-inflammatory, antibacterial, and chemopreventive effects[1].

IC_{50} & Target

p65

In Vitro

Vanillic acid is non-toxic to HT22 cells at all three concentrations (50, 100 and 200 μM); Vanillic acid co-treatment with $A\beta_{1-42}$ significantly increases (1.5-, 1.9- and 2-fold respectively) cell viability[2].

Cell Viability Assay[2]

Cell Line:	HT22 cells
Concentration:	50, 100 and 200 μM
Incubation Time:	24 hours
Result:	Increased the viability of HT22 cells after 24 h at three different concentrations (50, 100 and 200 μM).

In Vivo

Vanillic acid (3-30 mg/kg; i.p.; 5 hours) inhibits Carrageenan-induced mechanical hyperalgesia, paw edema, and neutrophil and macrophage recruitment[1].

Animal Model:	Male Swiss mice (25-30 g)[1]
Dosage:	3, 10, or 30 mg/kg
Administration:	Intraperitoneal treatment; 5 hours
Result:	Inhibited Carrageenan-induced mechanical hyperalgesia, paw edema, and neutrophil and macrophage recruitment.

REFERENCES

[1]. Calixto-Campos C, et al. Vanillic acid Inhibits Inflammatory Pain by Inhibiting Neutrophil Recruitment, Oxidative Stress, Cytokine Production, and NFκB Activation in Mice. J Nat Prod. 2015 Aug 28;78(8):1799-808.

[2]. Amin FU, et al. Vanillic acid attenuates $A\beta_{1-42}$-induced oxidative stress and cognitive impairment in mice. Sci Rep. 2017 Jan 18;7:40753.

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

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