Vanillic acid

Cat. No.: HY-N0708

CAS No.: 121-34-6

Molecular Formula: $C_8H_8O_4$

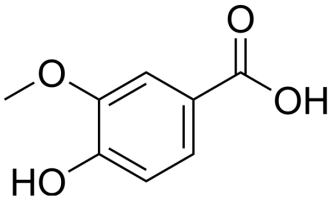
Molecular Weight: 168.15

Target: NF-κB; Bacterial; Endogenous Metabolite

Pathway: NF-κB; Anti-infection; Metabolic Enzyme/Protease

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

Solvent / Mass / Concentration	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 >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   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 >> 90% corn oil
   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, also found in Angelica sinensis. Vanillic acid inhibits NF-κB activation. Anti-inflammatory, antibacterial, and chemopreventive effects[1].

IC_{50} & Target	p65	Microbial Metabolite	Human Endogenous Metabolite

In Vitro

Vanillic acid is non-toxic to HT22 cells at all three concentrations (50, 100 and 200 μM); Vanillic acid co-treatment with $Aβ_{1-42}$

significantly increases (1.5-, 1.9- and 2-fold respectively) cell viability[2].

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

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].

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

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.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA