Tyrosol

Cat. No.: HY-N0474

CAS No.: 501-94-0

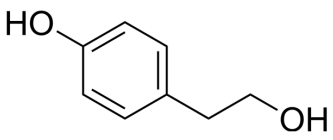
Molecular Formula: $C_8H_{10}O_2$

Molecular Weight: 138.16

Target: NF-κB; Endogenous Metabolite

Pathway: NF-κB; Metabolic Enzyme/Protease

Storage: 4°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (723.80 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	7.2380 mL	36.1899 mL	72.3798 mL
5 mM	1.4476 mL	7.2380 mL	14.4760 mL
10 mM	0.7238 mL	3.6190 mL	7.2380 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 (18.09 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (18.09 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (18.09 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tyrosol is a derivative of phenethyl alcohol. Tyrosol attenuates pro-inflammatory cytokines from cultured astrocytes and NF-κB activation. Anti-oxidative and anti-inflammatory effects[1].

IC_{50} & Target

Microbial Metabolite	Human Endogenous Metabolite

In Vitro

Tyrosol (1.6 mM) significantly increases the cell viability of cultured astrocytes exposed to oxygen glucose deprivation (OGD) [1].

Tyrosol (1.6 mM) attenuates the released TNF-α and IL-6 level from astrocyte via regulating Janus N-terminal kinase (JNK) [1]

	. The reduction of cytokines from astrocyte might be due to its inhibition of astrocyte activation and regulation of STAT3 signaling pathway since Tyrosol (1.6 mM) attenuates the expression level of GFAP (glial fibrillary acidic protein) and the phosphorylation of STAT3[1]. Tyrosol prevents the degradation of IκBα and the increase of IκBα phosphorylation in astrocytes exposed to OGD, which leads to the suppression of NF-κB function during ischemia[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Sub-plantar injection of carrageenan causes a noticeable increase in paw thickness, reaching a peak after 2 h post-injection. This effect is reduced when Tyrosol (0.5 mg/kg) or Tyrosol-sulphate is injected prior to the treatment with carrageenan. Similar AUC values for paw oedema are obtained after the administration of Tyrosol at a dose of 0.5 mg/kg and Tyrosol-sulphate at a dose of 0.1 mg/kg. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Pharm Biol. 2019 Dec;57(1):684-693.

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REFERENCES

[1]. Luo G, et al. Tyrosol attenuates pro-inflammatory cytokines from cultured astrocytes and NF-κB activation in in vitro oxygen glucose deprivation. Neurochem Int. 2018 Dec;121:140-145.

[2]. Muriana FJG, et al. Tyrosol and its metabolites as antioxidative and anti-inflammatory molecules in human endothelial cells. Food Funct. 2017 Aug 1;8(8):2905-2914.

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