Neochlorogenic acid

Cat. No.: HY-N0722

CAS No.: 906-33-2

Molecular Formula: $C_{16}H_{18}O_9$

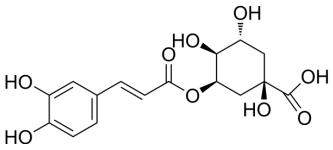
Molecular Weight: 354.31

Target: NF-κB; Interleukin Related; TNF Receptor; COX

Pathway: NF-κB; Immunology/Inflammation; Apoptosis

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 (282.24 mM; Need ultrasonic)

H_2O : 2 mg/mL (5.64 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8224 mL	14.1119 mL	28.2239 mL
	5 mM	0.5645 mL	2.8224 mL	5.6448 mL
	10 mM	0.2822 mL	1.4112 mL	2.8224 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 4 mg/mL (11.29 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.08 mg/mL (5.87 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (5.87 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (5.87 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Neochlorogenic acid is a natural polyphenolic compound found in dried fruits and other plants. Neochlorogenic acid inhibits the production of TNF-α and IL-1β. Neochlorogenic acid suppresses iNOS and COX-2 protein expression. Neochlorogenic acid also inhibits phosphorylated NF-κB p65 and p38 MAPK activation.

IC_{50} & Target	p65	IL-1β	COX-2
In Vitro	Neochlorogenic acid (NCA) shows a reduction of lipopolysaccharide (LPS)-induced NO production by suppressing iNOS and COX-2 protein expression and production of pro-inflammatory cytokines, such as TNF-α and IL-1β, in BV2 microglia cells. In addition, phosphorylated p38 MAPK and NF-κB p65 are also inhibited by Neochlorogenic acid in activated microglia. iNOS and COX-2 levels are increased in LPS-induced BV2 cells, but this increase is significantly inhibited after treatment with 50 and 100 μM Neochlorogenic acid[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.		

PROTOCOL

Cell Assay [1]	Mouse BV2 microglial cells are maintained in DMEM, supplemented with 5 % FBS and 1 % antibiotic–antimycotic in a humidified incubator with 5 % CO_2 at 37°C. Neochlorogenic acid and Dexamethasone as positive control are dissolved in DMSO to a final concentration of 10 mM for the stock solution. Treatments with LPS and/or Neochlorogenic acid are carried out under serum-free conditions. Effects of Neochlorogenic acid are measured on cell viability in lipopolysaccharide (LPS)-stimulated BV2 microglial cells. The cells are treated with or without LPS (4 μg/ml) and Neochlorogenic acid (10, 50, and 100 μM) for 24 h. Dexamethasone (10 μM) is used for positive control. Cell viability is confirmed by the MTT assay. The medium was removed from the wells, MTT was added, and the samples were then incubated for 3 h at 37°C. The formazan crystals were dissolved by adding DMSO, and the absorbance values were measured at 540 nm using a microplate reader[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Immunology. 2020 Dec;161(4):314-324.

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REFERENCES

[1]. Kim M, et al. Neochlorogenic Acid Inhibits Lipopolysaccharide-Induced Activation and Pro-inflammatory Responses in BV2 Microglial Cells. Neurochem Res. 2015 Sep;40(9):1792-8.

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