Yangonin

Cat. No.: HY-N0919

CAS No.: 500-62-9

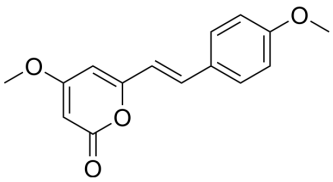
Molecular Formula: $C_{15}H_{14}O_4$

Molecular Weight: 258.27

Target: Cannabinoid Receptor; NF-κB; Autophagy

Pathway: GPCR/G Protein; Neuronal Signaling; NF-κB; Autophagy

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (96.80 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.8719 mL	19.3596 mL	38.7192 mL
	5 mM	0.7744 mL	3.8719 mL	7.7438 mL
	10 mM	0.3872 mL	1.9360 mL	3.8719 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 (9.68 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Yangonin exhibits affinity for the human recombinant cannabinoid CB1 receptor with an IC_{50} and a K_i of 1.79 μM and 0.72 μM, respectively.

IC_{50} & Target

CB1	CB1	RelA
1.79 μM (IC_{50})	0.72 μM (Ki)	

In Vitro

Yangonin is one of the six major kavalactones found in Piper methysticum.Yangonin potently inhibits NF-κB activation through suppression of the transcriptional activity of the RelA/p65 subunit of NF-κB. Yangonin significantly inhibits the induced expression of the NF-κB-reporter gene. However, Yangonin does not interfere with TNF-α-induced inhibitor of κBα (I κBα) degradation, p65 nuclear translocation, and DNA-binding activity of NF-κB. Yangonin inhibits not only the induced NF-κB activation by overexpression of RelA/p65, but also transactivation activity of RelA/p65. Yangonin does not inhibit TNF-α-induced activation of p38, but it significantly impairs activation of ERK 1/2 and stress-activated protein kinase/JNK[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]

HeLa cells are seeded at 1×10^5 cells/mL in 96-well plates containing 100 μL of DMEM medium with 10% FBS and incubated overnight. Yangonin is dissolved in DMSO and DMSO is added to all plates to compensate the same volume of DMSO. After 24 h, the cells are pretreated with different concentrations of Yangonin (0.1-3 μM) for 1 h, followed by stimulation with or without TNF-α for 24 h. Subsequently, cells are cultured with MTT solution (5 mg/mL) for 3 h. The viable cells convert MTT to formazan, which generates a blue-purple color after dissolving in 150 μL of DMSO. The absorbance at 570 nm is measured by an ELISA plate reader[2].

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

CUSTOMER VALIDATION

- Inflammopharmacology. 2022 Apr 22.

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REFERENCES

[1]. Ligresti A, et al. Kavalactones and the endocannabinoid system: the plant-derived yangonin is a novel CB_1 receptor ligand. Pharmacol Res. 2012 Aug;66(2):163-9.

[2]. Ma J, et al. Yangonin blocks tumor necrosis factor-α-induced nuclear factor-κB-dependent transcription by inhibiting the transactivation potential of the RelA/p65 subunit. J Pharmacol Sci. 2012;118(4):447-54.

[3]. Wruck CJ, et al. Kavalactones protect neural cells against amyloid beta peptide-induced neurotoxicity via extracellular signal-regulated kinase 1/2-dependent nuclear factor erythroid 2-related factor 2 activation. Mol Pharmacol. 2008 Jun;73(6):1785-95.

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

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