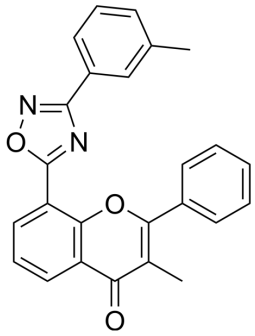
Anti-inflammatory agent 47

Cat. No.:	HY-155568
CAS No.:	2925288-12-4
Molecular Formula:	$C_{25}H_{18}N_2O_3$
Molecular Weight:	394.42
Target:	Reactive Oxygen Species; Apoptosis
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Apoptosis
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Flo8 is a potent anti-inflammatory and antioxidant compound. Flo8 inhibits the release of intracellular reactive oxygen species (ROS) and nitric oxide (NO) and suppresses neuronal apoptotic by inhibiting inflammatory and apoptotic signaling pathways. Flo8 can be used for Parkinson's Disease (PD) research[1].

In Vitro

Compound Flo8 (5 μM, 10 μM, 18 h) has less inhibitory effect on BV2 cell viability[1].
Compound Flo8 (5 μM, 18 h) exhibits significant inhibitory activity against ROS and NO production in BV2 cells[1].
Compound Flo8 (5 μM, 10 μM, 18 h) reduces the apoptosis level of SH-SY5Y cells by decreasing the expression of inflammatory factors in BV2 cells[1].
Compound Flo8 (5 μM, 10 μM, 18 h) inhibits LPS-induced M1 polarization and promotes M2 polarization in microglia[1].
Compound Flo8 (5 μM, 10 μM, 18 h) inhibits LPS-induced phosphorylation of ERK, p38 and JNK in BV2 cells[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay[1]

Cell Line:	BV2 cells
Concentration:	5 μM, 10 μM
Incubation Time:	18 h
Result:	Exhibited low cytotoxicity at 5 μM concentration and showed minimal toxicity at 10 μM for BV2 cells.

Real Time qPCR[1]

Cell Line:	BV2 cells
Concentration:	5 μM, 10 μM
Incubation Time:	18 h
Result:	Suppressed LPS-induced expression of M1 markers and increased the mRNA level of CD206, Arg-1, and IL-10 in BV2 cells. Decreased the mRNA expression levels of apoptosis-related genes BAX, Caspase3 and Cleaved Caspase3 but increased the expression levels of Bcl-2 in SH-SY5Y cells.

Western Blot Analysis[1]

Cell Line:	BV2 cells
Concentration:	5 μM, 10 μM
Incubation Time:	18 h
Result:	Inhibited phosphorylation of ERK, p38 and JNK in BV2 cells. Inhibited LPS-induced expression of p-I_{κ} B-α, p-NF-$_{\kappa}$B in BV2 cells. Decreased the protein expression levels of apoptosis-related genes BAX, Caspase3 and Cleaved Caspase3 but increased the expression levels of Bcl-2 in SH-SY5Y cells.

Immunofluorescence[1]

Cell Line:	BV2 cells
Concentration:	5 μM, 10 μM
Incubation Time:	18 h
Result:	Inhibited the translocation of NF-$_{\kappa}$B from the cytoplasm to the nucleus in BV2 cells.

In Vivo

Compound Flo8 (15 and 35 mg/kg for i.p., 2 weeks a day) can slow down neuroinflammation and inhibits neuronal apoptosis in the brain of MPTP-induced C57BL/6J mice[1].

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

Animal Model:	MPTP C57BL/6J mice model[1]
Dosage:	15 mg/kg, 35 mg/kg
Administration:	Intraperitoneal injection (i.p.)
Result:	Increased the mRNA expression of CD86, TNF-α, IL-6 and IL-1β but decreased CD206, Arg-1 and IL-10 in brain tissue. Inhibited the expression of MPTP-induced phosphorylation of p38, ERK, JNK and NF-$_{\kappa}$ B. Reduced dopamine levels in mouse serum in the MPTP group. Increased the protein expression of Caspase3 and BAX but decreased the expression of Bcl2 after MPTP induction in brain tissue.

REFERENCES

[1]. Shen ZB, et al. Design, synthesis, and SAR study of novel flavone 1,2,4-oxadiazole derivatives with anti-inflammatory activities for the treatment of Parkinson's disease. Eur J Med Chem. 2023 Jul 5;255:115417.

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