Tectochrysin

Cat. No.: HY-14592

CAS No.: 520-28-5

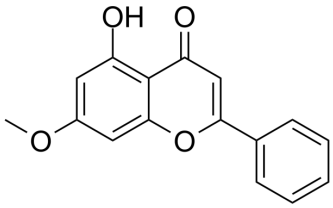
Molecular Formula: $C_{16}H_{12}O_4$

Molecular Weight: 268.26

Target: NF-κB

Pathway: NF-κB

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 10 mg/mL (37.28 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.7277 mL	18.6386 mL	37.2773 mL
	5 mM	0.7455 mL	3.7277 mL	7.4555 mL
	10 mM	0.3728 mL	1.8639 mL	3.7277 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 1.67 mg/mL (6.23 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Tectochrysin (Techtochrysin) is one of the major flavonoids of Alpinia oxyphylla Miquel. Tectochrysin inhibits activity of NF-κB.

IC_{50} & Target	p50	p65

In Vitro

Tectochrysin (Techtochrysin) inhibits activity of NF-κB. Tectochrysin (Techtochrysin) binds directly to the p50 unit. Tectochrysin (Techtochrysin) concentration-dependently inhibits the translocation of p50 and p65 into the nucleus through inhibition of the phosphorylation of IκB. To assess the inhibitory effect of Tectochrysin on cell growth of colon cancer cells (SW480, HCT116), cell viability is analyzed by MTT assay. The cells are treated with varying concentrations of Tectochrysin (Techtochrysin) (1, 5, 10 μg/mL) for 24 h. Tectochrysin (Techtochrysin) inhibits cell growth in colon cancer cells in a concentration-dependent manner. Tectochrysin (Techtochrysin) inhibits SW480 cells growth with IC_{50} value of 6.3 μg/mL and HCT116 cells growth with IC_{50} value of 8.4 μg/mL. Morphologic observation shows that the cells are reduced in size by the treatment of NSC 80687 (10 μg/mL) in SW480 cells and HCT116 cells. However, Tectochrysin (Techtochrysin) is not cytotoxic in the normal CCD-18co cells in the tested concentration by MTT assay. To delineate whether the induction of

	apoptotic cell death is critical for cell growth inhibition by NSC 80687, changes are evaluated in the chromatin morphology of cells using DAPI staining. To further characterize the apoptotic cell death by Tectochrysin (Techtochrysin), TUNEL staining assays are performed, and then the labeled cells are analyzed by fluorescence microscopy. Apoptotic cells number (DAPI-positive TUNEL stained cells) in SW480 cell is increased to 1 and 58 % by 0 and 10 μg/mL NSC 80687, respectively, and 1 and 54 % by 0 and 10 μg/mL Tectochrysin in HCT116[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	To elucidate the antitumor effects of Tectochrysin in in vivo, the tumor growth in colon cancer xenograft-bearing nude mice following Tectochrysin (NSC 80687) treatments is investigated. In HCT116 xenograft studies, Tectochrysin (NSC 80687) is administrated i.p. twice per week for 3 weeks to mice with tumors ranging from 200 to 300 mm^3 in volume. The mice are weighed twice per week. The changes in body weights between the control and the Tectochrysin (NSC 80687)-treated mice (n=10) are not remarkably different during the experiment. However, On day 21, the final tumor weights are recorded. Tumor weights and volumes in mice treated with Tectochrysin (NSC 80687) at 5 mg/kg doses are 57.9 % and 46.4 % of the vehicle group, respectively[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Each SW480, HCT116, HT-29, A549 and MCF-7 cell line ($1×10^4$ cells) is incubated in 200 μL of RPMI 1640, DMEM medium with NSC 80687 (concentrations ranging from 1, 5, 10 μg/mL) in a 96-well flat-bottomed plate in triplicate. After incubation for 72 h at 37°C, MTT diluted in RPMI 1640, DMEM medium are added to each well and incubation is carried out for 90 min. The supernatant is then discarded and the crystal products are eluted with DMSO (200 μL/well). Colorimetric evaluation is performed with a spectrophotometer at 540 nm. The apoptosis assay is first performed by using DAPI staining. SW480 and HCT116 human colon cancer cells are cultured with concentrations of NSC 80687 (5 μg/mL), and induction of apoptotic cell death is evaluated after 24 h. Tunel assay is done[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice[1] Five-week-old male BALB/c athymic nude mice (n=10/group) are used. HCT116 cancer cells are injected subcutaneously ($1×10^7$ cells/0.1 mL PBS/animal) into the lower right flanks of mice. After 14 days, when the tumors have reached an average volume of 200-300 mm^3, the tumor-bearing nude mice are intraperitoneally injected with Tectochrysin (NSC 80687) (5 mg/kg dissolved in 0.1 % DMSO) twice per week for 3 weeks. The tumor volumes are measured with vernier calipers and calculated[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Park MH, et al. Anticancer effect of Tectochrysin in colon cancer cell via suppression of NF-kappaB activity and enhancement of death receptor expression. Mol Cancer. 2015 Jun 30;14:124.

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