Spilanthol

Cat. No.: HY-126383

CAS No.: 25394-57-4

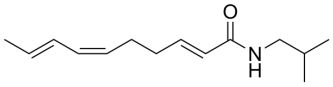
Molecular Formula: $C_{14}H_{23}NO$

Molecular Weight: 221.34

Target: Others

Pathway: Others

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Spilanthol is an orally active analgesic, neuroprotective, antioxidant, antimutagenic, anti-cancer, anti-inflammatory, antimicrobial and insecticidal compound.pilanthol can induce cAMP to inhibit negative regulation of urinary concentration mechanism. Spilanthol can be use as diuretic research[1][4][5].

IC_{50} & Target

Cyclic Adenosine monophosphate (cAMP)[5]

In Vitro

Spilanthol (50~150 μM, 24h) has no effect on cell viability in A549 human lung epithelial cell[3].
Spilanthol (50~150 μM, 24h) has anti-inflammatory effects in A549 human lung epithelial cell line[3].
Spilanthol (50~150 μM, 24h) can reduc ICAM-1 gene expression in A549 human lung epithelial cell line[3].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[3]

Cell Line:	A549 human lung epithelial cell line
Concentration:	50μM, 75μM, 100μM, 150 μM
Incubation Time:	24h
Result:	There was no significant change in cell viability.

Cell Cytotoxicity Assay[3]

Cell Line:	A549 human lung epithelial cell line
Concentration:	50μM, 75μM, 100μM, 150 μM
Incubation Time:	24h
Result:	Significantly inhibited the release of the inflammatory cytokine TNF-α and the chemokine MCP-1.

Western Blot Analysis[3]

Cell Line:	A549 human lung epithelial cell line

Concentration:	50μM, 75μM, 100μM, 150 μM
Incubation Time:	24h
Result:	Inhibited COX-2 expression and increased the expression of HO-1.

Cell Viability Assay[3]

Cell Line:	A549 human lung epithelial cell line
Concentration:	50μM, 75μM, 100μM, 150 μM
Incubation Time:	24h
Result:	Significantly reduced THP-1 cells adhered.

In Vivo

Spilanthol (1-1.875 mg/kg, Ip, Once) shows antinociceptive activity in acetic acid-induced abdominal writhes Male ICR mice model and capsaicin-induced licking paw Male ICR mice model[2].
Spilanthol (30 mg/kg, Po, Once a day for four days) a protective effect against the intestinal damage associated in swiss mice model of intestinal mucositis induced by 5-fluorouracil (HY-90006)[4].
Spilanthol (800 mg/kg, Po, Once) has a diuretic effect in adult C57BL/6J male mice[5].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Acetic acid-induced abdominal writhes Male ICR mice model[2]
Dosage:	1-1.875 mg/kg
Administration:	Intraperitoneal administration(i.p.), Once
Result:	As the dose increased, the number of abdominal contractions and licking behavior decreased, and a maximum antinociceptive effect of 46.67%

Animal Model:	Swiss mice model of intestinal mucositis induced by 5-fluorouracil[4].
Dosage:	30 mg/kg
Administration:	Oral adminstraion(p.o.), Once a day for four days
Result:	Showed the intestinal wall recovery, villi are higher and less irregularity and high number and greater length of intestinal crypts.

Animal Model:	Adult C57BL/6J male mice[5].
Dosage:	800 mg/Kg
Administration:	Oral adminstraion (p.o.), Once
Result:	Increased in urine output, sodium, and increased excretion of sodium, potassium and chloride.

REFERENCES

[1]. Alan F, et al. Spilanthol: occurrence, extraction, chemistry and biological activities. Elsevier. 2016:128-133

[2]. Déciga-Campos M, et al. Antinociceptive effect of Heliopsis longipes extract and affinin in mice. Planta Med. 2010 May;76(7):665-70.

[3]. Huang WC, et al. Spilanthol Inhibits COX-2 and ICAM-1 Expression via Suppression of NF-κB and MAPK Signaling in Interleukin-1β-Stimulated Human Lung Epithelial Cells. Inflammation. 2018 Oct;41(5):1934-1944.

[4]. de Freitas-Blanco VS, et al. Spilanthol, the Principal Alkylamide from Acmella oleracea, Attenuates 5-Fluorouracil-Induced Intestinal Mucositis in Mice. Planta Med. 2019 Feb;85(3):203-209.

[5]. [5]Gerbino A, et al.. Spilanthol from Acmella Oleracea Lowers the Intracellular Levels of cAMP Impairing NKCC2 Phosphorylation and Water Channel AQP2 Membrane Expression in Mouse Kidney. PLoS One. 2016 May 23;11(5):e0156021.

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