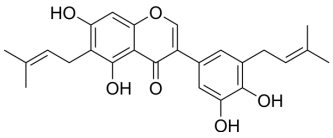
Isoangustone A

Cat. No.:	HY-N4006
CAS No.:	129280-34-8
Molecular Formula:	$C_{25}H_{26}O_6$
Molecular Weight:	422.47
Target:	Apoptosis; Autophagy
Pathway:	Apoptosis; Autophagy
Storage:	-20°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



BIOLOGICAL ACTIVITY

Description

Isoangustone A is an anticancer and anti-inflammatory agent. Isoangustone A induces cancer cells apoptosis and autophagic cell death[1][2][3].

IC_{50} & Target

Apoptosis, Autophagy[2]

In Vitro

Isoangustone A (10 and 20 μM; 48 and 72 h) suppresses proliferation and induces G1 phase cell cycle arrest in SK-MEL-28 cells[1].

Isoangustone A (10 and 20 μM; 48 h) decreases the abundance of G1 phase-related proteins mediated through the Akt/GSK3 β and MKK4/MKK7/JNKs signaling pathways[1].

Isoangustone A suppresses PI3-K, MKK4, and MKK7 kinase activities by directly binding in an ATP-competitive manner[1].

Isoangustone A (20 μM; 0.5-4 h) induces autophagy in colorectal cancer cells by activating AMPK signaling[2].

Isoangustone A (1-20 μM; 0-100 min) inhibits mitochondrial respiration[2].

Isoangustone A (15 μM; 6 h) induces SW480 cells apoptosis[2].

Isoangustone A (1-20 μM; 3 days) suppresses mesangial fibrosis and inflammation in human renal mesangial cells[3].

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

Cell Proliferation Assay[1]

Cell Line:	SK-MEL-28
Concentration:	10 and 20 μM
Incubation Time:	48 and 72 h
Result:	Inhibited proliferation in a dose- and time-dependent manner.

Cell Cycle Analysis[1]

Cell Line:	SK-MEL-28
Concentration:	10 and 20 μM
Incubation Time:	48 h
Result:	Caused cell cycle arrest at G1 phase.

Western Blot Analysis[1]

Cell Line:	SK-MEL-28
Concentration:	10 and 20 μM
Incubation Time:	48 h
Result:	Inhibited the expression of cyclin D1 and cyclin E. Suppressed phosphorylation of Rb in a dose-dependent manner. Inhibited the phosphorylation of Akt (Ser473, Thr308) and GSK3 β (Ser9). Suppressed the phosphorylation of JNK1/2, but had no effect on ERK1/2 or p38.

Cell Autophagy Assay[2]

Cell Line:	SW480 cells
Concentration:	20 μM
Incubation Time:	0.5, 2 and 4 h
Result:	Deformed mitochondria, nondegradable cellular debris were all observable together with autophagic vacuoles in cells after 4 h.

Apoptosis Analysis[2]

Cell Line:	SW480 cells
Concentration:	15 μM
Incubation Time:	6 h
Result:	Induced elevation of apoptotic Annexin V^+/PI^- and Annexin V^+/PI^+ cell populations.

In Vivo

Isoangustone A (2 or 10 mg/kg; i.p.; daily for 35 days) significantly decreases tumor growth, volume, and weight of SK-MEL-28 xenografts in mice[1].

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Animal Model:	Male Balb/c nu/nu mice, SK-MEL-28 xenograft model[1]
Dosage:	2 or 10 mg/kg
Administration:	Intraperitoneal injection, daily for 35 days
Result:	Significantly suppressed tumor weight compared to the control group. Markedly inhibited the expression of proliferating cell nuclear antigen (PCNA). Decreased phosphorylation levels of Akt.

REFERENCES

[1]. Song NR, et al. Isoangustone A, a novel licorice compound, inhibits cell proliferation by targeting PI3K, MKK4, and MKK7 in human melanoma. Cancer Prev Res (Phila). 2013 Dec;6(12):1293-303.

[2]. Tang S, et al. Isoangustone A induces autophagic cell death in colorectal cancer cells by activating AMPK signaling. Fitoterapia. 2021 Jul;152:104935.

[3]. Li J, et al. Isoangustone A suppresses mesangial fibrosis and inflammation in human renal mesangial cells. Exp Biol Med (Maywood). 2011 Apr 1;236(4):435-44.

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

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