Anti-inflammatory agent 31

Cat. No.: HY-150587

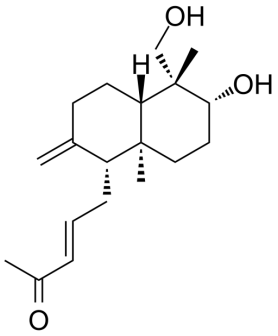
Molecular Formula: $C_{19}H_{30}O_3$

Molecular Weight: 306.44

Target: ERK; NF-κB

Pathway: MAPK/ERK Pathway; Stem Cell/Wnt; NF-κB

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



BIOLOGICAL ACTIVITY

Description

Anti-inflammatory agent 31 (enone 17) is a kind of andrographolide derivatives, is a anti-inflammatory agent. Anti-inflammatory agent 31 inhibits NF-κB activation by upstream blockade of PI3K/Akt and ERK1/2 MAPK activation. Anti-inflammatory agent 31 shows recovery effective of the intracellular GSH levels and protective effect on liver[1].

IC_{50} & Target	ERK1	ERK2

In Vitro

Anti-inflammatory agent 31 (enone 17) (100, 200, and 400 μM; 24 h) prevents the DNA binding of the activated NF-κB p50 subunit in a dose-dependent manner[1].

Anti-inflammatory agent 31 reacts as a quick rate (K_{GSH}=0.076 $M^{-1}.h^{-1}$) and long half-live ($T_{1/2}$=6.47 h)[1].

Anti-inflammatory agent 31 (5, 20, and 50 μM; 24 h) shows recovery effective of the intracellular GSH levels, and (5 μM) induced more than 2.5-fold increase in GSH levels as compared to the basal levels[1].

Anti-inflammatory agent 31 (5, 20, and 50 μM; 24 h) displays low cytotoxicity in LO2 and HEK293 cells with CC_{50} of 14.68, 26.25 μM, respectively[1].

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

Immunofluorescence[1]

Cell Line:	RAW-blue™ cells
Concentration:	5, 10, 20 μM
Incubation Time:	24 hours
Result:	Inhibited the LPS-induced NF-κB activity and indicated the anti-inflammatory properties.

In Vivo

Anti-inflammatory agent 31 (enone 17) (i.p.; 0.3, 1.0 mg/kg) decreases total white blood cell and neutrophils counts, and alleviates LPS-induced acute lung injury in a dose-dependent manner in mouse[1].

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Animal Model:	LPS-induced acute lung injury (ALI) mouse model (female BALB/c mice; 7-week-old)[1]
Dosage:	0.3, 1.0 mg/kg
Administration:	Intraperitoneal injection 1 h after LPS challenge; twice daily for 4 days

Result:	Alleviated LPS-induced acute lung injury.

REFERENCES

[1]. Tran QTN, Tan DWS, Wong WSF, Chai CLL. From irreversible to reversible covalent inhibitors: Harnessing the andrographolide scaffold for anti-inflammatory action. Eur J Med Chem. 2020 Oct 15;204:112481.

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