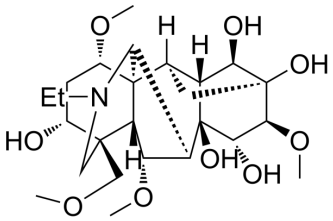
Aconine

Cat. No.:	HY-N0277		
CAS No.:	509-20-6		
Molecular Formula:	$C_{25}H_{41}NO_9$		
Molecular Weight:	499.59		
Target:	NF-κB		
Pathway:	NF-κB		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (200.16 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0016 mL	10.0082 mL	20.0164 mL
	5 mM	0.4003 mL	2.0016 mL	4.0033 mL
	10 mM	0.2002 mL	1.0008 mL	2.0016 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (4.16 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.16 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.16 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Aconine inhibits receptor activator of nuclear factor (NF)-κB ligand (RANKL)-induced NF-κB activation.
IC_{50} & Target	NF-κB
In Vitro	Treatment with Aconine significantly inhibits the RANKL-induced transcriptional activity of NF-κB in a dose-dependent manner. Aconine inhibits RANKL-induced osteoclast differentiation in RAW264.7 cells by suppressing the activation of NF-κB and NFATc1 and the expression of the cell-cell fusion molecule DC-STAMP. Aconine (0.125, 0.25 μM) does not affect the

viability of RAW264.7 cells, but dose-dependently inhibits RANKL-induced osteoclast formation and bone resorptive activity. Aconine dose-dependently inhibits the RANKL-induced activation of NF-κB and NFATc1 in RAW264.7 cells, and subsequently reduces the expression of osteoclast-specific genes (c-Src, β3-Integrin, cathepsin K and MMP-9) and the expression of dendritic cell-specific transmembrane protein (DC-STAMP), which plays an important role in cell-cell fusion[1].

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

PROTOCOL

Cell Assay [1]

To evaluate the effect of Aconine on the viability of RAW264.7 cells, cytotoxicity assays are performed using the Cell Counting Kit-8. Briefly, the cells are seeded in 96-well plates at a density of 2×10^4, 3×10^3, 1.2×10^3, 1×10^3 or 1×10^3 cells/well in the presence or absence of Aconine (0.125-0.5 mM) for 8 h, 24 h, 48 h, 5 d or 7 d, respectively. After incubating the cells with CCK-8 solution for 2 h, optical density is measured at 450 nm using a GENios microplate reader. Cell viability is expressed as a percentage of the control[1].

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

CUSTOMER VALIDATION

- Environ Pollut. 2021 Jan 1;268(Pt B):115748.
- Cancer Gene Ther. 2021 Apr;28(3-4):307-320.

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REFERENCES

[1]. Zeng XZ, et al. Aconine inhibits RANKL-induced osteoclast differentiation in RAW264.7 cells by suppressing NF-κB and NFATc1 activation and DC-STAMP expression. Acta Pharmacol Sin. 2016 Feb;37(2):255-63.

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