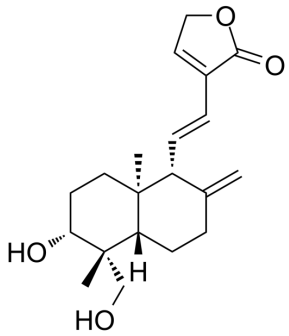
14-Deoxy-11,12-didehydroandrographolide

Cat. No.:	HY-N1490
CAS No.:	42895-58-9
Molecular Formula:	$C_{20}H_{28}O_4$
Molecular Weight:	332.43
Target:	NF-κB
Pathway:	NF-κB

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 110 mg/mL (330.90 mM; Need ultrasonic)
DMF : 100 mg/mL (300.82 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0082 mL	15.0408 mL	30.0815 mL
5 mM	0.6016 mL	3.0082 mL	6.0163 mL
10 mM	0.3008 mL	1.5041 mL	3.0082 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: ≥ 2.75 mg/mL (8.27 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.75 mg/mL (8.27 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.75 mg/mL (8.27 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

14-Deoxy-11,12-didehydroandrographolide is an analogue of Andrographolide. 14-Deoxy-11,12-didehydroandrographolide inhibits NF-κB activation.

IC_{50} & Target

NF-κB

In Vitro

14-deoxy-11,12-didehydroandrographolide, a naturally occurring noncytotoxic analogue of Andrographolide, effectively

	reduces Ovalbumin (OVA)-induced inflammatory cell recruitment into bronchoalveolar lavage (BAL) fluid, IL-4, IL-5, IL-13, and eotaxin production, serum IgE synthesis, pulmonary eosinophilia, mucus hypersecretion, mast cell degranulation, and airway hyper-responsiveness (AHR) in a mouse asthma model, probably via inhibition of NF-κB activity[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	14-deoxy-11,12-didehydroandrographolide (1 mg/kg) dramatically reduces resistance (Rl) and restores Cdyn in OVA-challenged mice in response to methacholine[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	A549 cells (3×10^3/well), BEAS-2B cells (5×10^3/well), and RBL-2H3 cells (3×10^3/well) are seeded in flat-bottomed 96-well plates overnight and then incubated with increasing concentrations (3-120 μM) of 14-deoxy-11,12-didehydroandrographolide or Andrographolide for 24 and 48 h at 37°C. Cell viability is analyzed using the CellTiter 96 AQ $_{ueous}$ cell proliferation assay. This MTS assay is based on the ability of viable cells to convert a soluble tetrazolium salt to a colored formazan product. Absorbance is recorded at 490 nm[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice[1] Female BALB/c mice, 6 to 8 weeks old, are sensitized and challenged with OVA. Briefly, mice are sensitized by ip injections of 20 μg of OVA and 4 mg of $Al(OH)_3$ suspended in 0.1 mL of saline on days 0 and 14. On days 22, 23, and 24, mice are challenged with 1% OVA aerosol for 30 min. 14-deoxy-11,12-didehydroandrographolide (0.1, 0.5, and 1 mg/kg) or vehicle (1% DMSO) in 0.1 mL of saline is given by ip injections 2 h before and 10 h after each OVA aerosol challenge. Saline aerosol is used as a negative control. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Pharm Biomed Anal. 2023 Dec 15, 115924.
- ChemMedChem. 2022 Jan 31;e202100732.
- Research Square Preprint. 2021 Aug.

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REFERENCES

[1]. Guan SP, et al. Protective role of 14-deoxy-11,12-didehydroandrographolide, a noncytotoxic analogue ofandrographolide, in allergic airway inflammation. J Nat Prod. 2011 Jun 24;74(6):1484-90.

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