# Maslinic acid

**Cat. No.:** HY-N0629

**CAS No.:** 4373-41-5

**Molecular Formula:** $C_{30}H_{48}O_4$

**Molecular Weight:** 472.7

**Target:** NF-κB; Bacterial; HIV; Endogenous Metabolite

**Pathway:** NF-κB; Anti-infection; Metabolic Enzyme/Protease

**Storage:**

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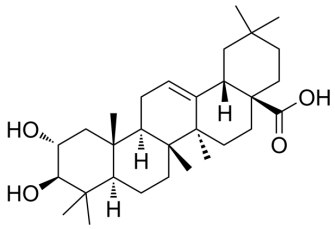
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 6 months |
| | -20°C | 1 month |




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 100 mg/mL (211.55 mM; Need ultrasonic)

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.1155 mL | 10.5775 mL | 21.1551 mL |
| | 5 mM | 0.4231 mL | 2.1155 mL | 4.2310 mL |
| | 10 mM | 0.2116 mL | 1.0578 mL | 2.1155 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 2.5 mg/mL (5.29 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.29 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Maslinic acid can inhibit the DNA-binding activity of NF-κB p65 and abolish the phosphorylation of IκB-α, which is required for p65 activation.

**$IC_{50}$ & Target**

p65

**In Vitro**

Maslinic acid (MA) inhibits LPS-induced NF-κB translocation to nucleus and phosphorylation of IκB-α. Maslinic acid has also been reported to suppress NF-κB regulated osteoclastogenesis in bone marrow monocytes and inhibit TNF-α-induced NF-κB activity and its downstream genes' expression in pancreatic cancer cells. To confirm if the anti-inflammatory effects of olive pomace extracts (OPEs) inRAW264.7 cells can be attributed to Maslinic acid, dose-dependence experiments determined the effective concentration of Maslinic acid to be 10-20 μM. 20 μM Maslinic acid significantly suppresses TNF-α production and

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|---|---|
| | inhibits IL-1, IL-6, and COX-2 mRNA expression in RAW 264.7 cell. Maslinic acid (at 10 and 20 μM) significantly suppresses the DNA-binding activity of NF-κB p65 in LPS-induced RAW 264.7 cells. Pretreatment with Maslinic acid significantly reduces the LPS-induced phosphorylation of IκB-α[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | Paw swelling is alleviated when mice are administered with 200 mg/kg Maslinic acid (MA), significantly suppressing inflammation, compared to the carrageenan induced control group, 4 h after λ-carrageenan injection (0.91±0.51 mm and 1.79±0.4 mm, respectively)[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## PROTOCOL

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|---|---|
| **Cell Assay [1]** | RAW 264.7 cells are seeded in 96-well culture plates at a density of $1\times10^5$ cells/mL and after incubation for 24 h, are treated with OPE1 (300 μg/mL or 400 μg/mL), OPE2 (20 μg/mL or 40 μg/mL), or Maslinic acid (10 μM or 20 μM) , as well as with/without LPS at the same time. Cell viability i determined using the WST-1 reagent. Briefly, WST-1 reagent (10 μL) is added to each well and incubated for 1h in a humidified incubator. The absorbance of the samples measured at 450 nm (reference wavelength is 750 nm). Viability is expressed as a percentage of the absorbance measured in LPS-treated cells[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Animal Administration [1]** | Mice[1]<br>Five-week-old male Balb/c mice (19-21 g) are housed in a conventional condition and provided with the free access to standard rodent chow and water. Edema is induced by intraplantar injection of 100 μL 1% carrageenan into the hind left paw. Maslinic acid is tested initially at a dose of 200 mg/kg, orally administered 60 min before and after carrageenan injection. Paw thickness is measured using electronic digital calipers, 2, 3, and 4 h following carrageenan treatment. Mice are sacrificed by carbon dioxide inhalation 4 h after carrageenan injection[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Cancer Lett. 2020 Dec 9.
- Cell Oncol. 2022 Apr 29.
- Am J Chin Med. 2023 Mar 27;1-23.
- Front Cell Dev Biol. 2021 Jun 11;9:684393.
- Front Cardiovasc Med. 2021 Nov 10;8:768947.

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## REFERENCES

[1]. Fukumitsu S, et al. Anti-inflammatory and anti-arthritic effects of pentacyclic triterpenoids maslinic acid through NF-κB inactivation. Mol Nutr Food Res. 2016 Feb;60(2):399-409.



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