# Demethylzeylasteral

**Cat. No.:** HY-N0587

**CAS No.:** 107316-88-1

**Molecular Formula:** $C_{29}H_{36}O_6$

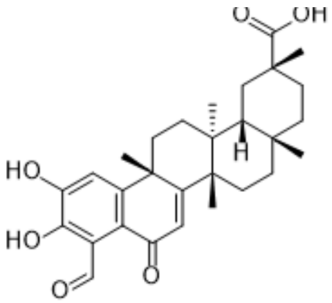
**Molecular Weight:** 480.59

**Target:** Apoptosis; TGF-beta/Smad; Estrogen Receptor/ERR; NF-κB; FAK

**Pathway:** Apoptosis; Stem Cell/Wnt; TGF-beta/Smad; Vitamin D Related/Nuclear Receptor; NF-κB; Protein Tyrosine Kinase/RTK

**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 : 250 mg/mL (520.19 mM; Need ultrasonic)

| Preparing Stock Solutions | Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 2.0808 mL | 10.4039 mL | 20.8078 mL |
| | 5 mM | 0.4162 mL | 2.0808 mL | 4.1616 mL |
| | 10 mM | 0.2081 mL | 1.0404 mL | 2.0808 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 (4.33 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Demethylzeylasteral is an orally active triterpenoid compound isolated from Tripterygium wilfordii, which has functions such as anti-inflammatory, anti-tumor, anti fertility, estrogen metabolism regulation, immune suppression, and immune system regulation [1][2].

**In Vitro**

Demethylzeylasteral (0-50 μM, 72 h) inhibits cell growth and proliferation by inducing cell cycle arrest in glioma cells[1].
Demethylzeylasteral (5, 10 μM, 48 h) inhibits matrix degradation, migration and invasion of breast cancer cells[2].
Demethylzeylasteral (1-20 μM, 48 h) inhibits cell proliferation and induces apoptosis by inhibiting MCL1 in melanoma cells[3].
Demethylzeylasteral (0-2 μM, 48 h) inhibits the proliferation, migration, and activation of hepatic stellate cells[6].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1].

| | |
|---|---|
| Cell Line: | LN-229, U-87, A-172, U-251 and U-118 cells |
| Concentration: | 0-50 μM |
| Incubation Time: | 72 h |
| Result: | Inhibited the proliferation rate of cells |

Cell Migration Assay [2].

| | |
|---|---|
| Cell Line: | MDA-MB-231 cell |
| Concentration: | 5, 10 μM |
| Incubation Time: | 48 h |
| Result: | Inhibited cell migration of MDA-MB-231 cells |

Western Blot Analysis[3].

| | |
|---|---|
| Cell Line: | MV3 cell, A375 cell |
| Concentration: | 1-20 μM |
| Incubation Time: | 48 h |
| Result: | Reduced expression of anti-apoptotic protein MCL1 |

Western Blot Analysis[6].

| | |
|---|---|
| Cell Line: | LX-2 cell, HSC-T6 cell, primary HSC cell |
| Concentration: | 0-2 μM |
| Incubation Time: | 48 h |
| Result: | Reduced the mRNA and protein expression of COL1A1, MMP2, α-SMA, and TIMP-2 |

**In Vivo**

Demethylzeylasteral (30 mg/kg, 6 times every 2 days, i.p.) inhibits glioma growth by regulating the miR-30e-5p/MYBL2 axis[1].
Demethylzeylasteral (4 mg/kg, 5 weeks, i.p.) inhibits the invasion of triple negative breast cancer by blocking classical and non classical TGF - β signaling pathways[2].
Demethylzeylasteral (30-120 mg/kg, 8 weeks, i.p.) improves inflammation in a unilateral ureteral obstruction rat model by inhibiting the activation of the NF - κ B pathway[4].
Demethylzeylasteral (10, 40 mg/kg, 30 days, i.g.) can alleviate atherosclerosis in AS rabbits[5].
Demethylzeylasteral (10, 20 mg/kg, 4 weeks, p.o.) improves CCl4 induced liver fibrosis in mice by inhibiting AGAP2 mediated FAK/AKT signaling[6].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | Female nude mice modeled with glioma LN-229 cells[1]. |
| Dosage: | 30 mg/kg, 6 times every 2 days |
| Administration: | Intraperitoneal injection (i.p.) |
| Result: | Reduced tumor volume |

| | |
|---|---|
| Animal Model: | Female BALB/c mice modeled with 4T1 cells[2]. |
| Dosage: | 4 mg/kg, 5 weeks |
| Administration: | Intraperitoneal injection (i.p.) |
| Result: | Reduced cancer lung metastasis |

| | |
|---|---|
| Animal Model: | Rat model of unilateral ureteral obstruction[4]. |
| Dosage: | 30-120 mg/kg, 8 weeks |
| Administration: | Intraperitoneal injection (i.p.) |
| Result: | Inhibited the increases in serum creatinine, blood urea nitrogen and Up/Ucr ratio |

| | |
|---|---|
| Animal Model: | Atherosclerotic rabbit[5]. |
| Dosage: | 10, 40 mg/kg, 30 days |
| Administration: | Intragastrical (i.g.) |
| Result: | Reduced blood lipids triglycerides (TG), total cholesterol (TC), low-density lipoprotein (LDL-C) |

| | |
|---|---|
| Animal Model: | CCl4-induced liver fibrosis model[6]. |
| Dosage: | 10, 20 mg/kg, 4 weeks |
| Administration: | Oral gavage (p.o.) |
| Result: | Inhibited the expression of TGF-β1 |

## CUSTOMER VALIDATION

- Phytomedicine. 21 July 2022, 154349.

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## REFERENCES


[1]. Zhang K, et al. Demethylzeylasteral inhibits glioma growth by regulating the miR-30e-5p/MYBL2 axis. Cell Death Dis. 2018 Oct 10;9(10):1035.

[2]. Li L, et al. Demethylzeylasteral (T-96) inhibits triple-negative breast cancer invasion by blocking the canonical and non-canonical TGF-β signaling pathways. Naunyn Schmiedebergs Arch Pharmacol. 2019 May;392(5):593-603.

[3]. Zhao Y, et al. Demethylzeylasteral inhibits cell proliferation and induces apoptosis through suppressing MCL1 in melanoma cells. Cell Death Dis. 2017 Oct 26;8(10):e3133.

[4]. Wang Q, et al. Demethylzeylasteral ameliorates inflammation in a rat model of unilateral ureteral obstruction through inhibiting activation of the NFκB pathway. Mol Med Rep. 2017 Jul;16(1):373-379.

[5]. Huang Y, et al. Experimental study of the anti-atherosclerotic effect of demethylzeylasteral. Exp Ther Med. 2017 Jun;13(6):2787-2792.

[6]. Chen K, et al. Demethylzeylasteral attenuates hepatic stellate cell activation and liver fibrosis by inhibiting AGAP2 mediated signaling. Phytomedicine. 2022 Oct;105:154349.



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