11-oxo-mogroside V

Cat. No.: HY-N0501

CAS No.: 126105-11-1

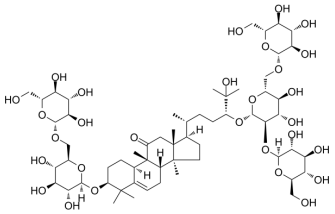
Molecular Formula: $C_{60}H_{100}O_{29}$

Molecular Weight: 1285.42

Target: Reactive Oxygen Species

Pathway: Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (77.80 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	0.7780 mL	3.8898 mL	7.7796 mL
	5 mM	0.1556 mL	0.7780 mL	1.5559 mL
	10 mM	0.0778 mL	0.3890 mL	0.7780 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: ≥ 2.5 mg/mL (1.94 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (1.94 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (1.94 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

11-oxo-mogroside V is a natural sweetener that exhibits strong antioxidant activity. It exhibits significant inhibitory effects on reactive oxygen species (O_2^-, H_2O_2 and *OH) with EC_{50} of 4.79, 16.52, and 146.17 μg/mL, respectively.

IC_{50} & Target

EC50: 4.79 μg/mL (O_2^-), 16.52 μg/mL (H_2O_2), 146.17 μg/mL (*OH)[1]

In Vitro

11-oxo-mogroside V shows a higher scavenging effect on O_2- (concentration at which 50% of chemiluminescence intensity is inhibited [EC_{50}]=4.79 μg/mL) and H_2O_2 (EC_{50}=16.52 μg/mL) than those of mogroside V. 11-oxo-mogroside V exhibits a remarkable inhibitory effect on *OH-induced DNA damage with EC_{50}=3.09 μg/mL[1].11-oxo-mogroside V, a natural sweetener, isolated from the fruits of Momordica grosvenori, exhibits strong inhibitory effect on the primary screening test

	indicated by the induction of Epstein-Barr virus early antigen (EBV-EA) by a tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). 11-oxo-mogroside V exhibits strong inhibitory effect on EBV-EA induction (91.2, 50.9 and 21.3% inhibition at 1000, 500 and 100 mol ratio/TPA concentration, respectively)[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	In the group treated with DMBA, TPA and 11-oxo-mogroside V, only 26.6 and 53.3% of mice bore papillomas even at 10 and 15 weeks of promotion, respectively, and only 1.0 3.3 and 4.7 papillomas are formed per mouse at 10, 15 and 20 weeks of promotion[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [2]	Mice[2] Specific pathogen-free female ICR (6 weeks old) and female SENCAR (6 weeks old) mice are use. The animals (female SENCAR, 6 weeks old) are divided into three groups, 15 mice each. The back of each mouse is shaved with surgical clipper, and the mice are topically treated with peroxynitrite (33.1 μg, 390 nmol, 1 mM NaOH) in acetone (0.1 mL) as an initiation treatment. For groups I (control group) II and III, 1 week after initiation with peroxynitrite, mice are promoted by the application with TPA (1 mg, 1.7 nmol) in acetone (0.1 mL) twice a week. For groups II and III, mogroside V and 11-oxo-mogroside V (0.0025%, 2.5 mg/100 mL) in drinking water is given orally, from 1 week before to 1 week after the initiation treatment with peroxynitrite, respectively. The incidence of papillomas is observed weekly for 20 weeks; the percentages of mice bearing papillomas and the average number of papillomas per mouse are recorded. The type of tumors in our experiment is also checked by the pathologist with the histological examination, and the malignant tumors are not observed at 20 weeks of promotion in our experimental system. The tumor incidence is statistically analyzed by Student's t-test in treated mice and controls. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Chen WJ, et al. The antioxidant activities of natural sweeteners, mogrosides, from fruits of Siraitia grosvenori. Int J Food Sci Nutr. 2007 Nov;58(7):548-56.

[2]. Takasaki M, et al. Anticarcinogenic activity of natural sweeteners, cucurbitane glycosides, from Momordica grosvenori. Cancer Lett. 2003 Jul 30;198(1):37-42.

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