Mogroside V

Cat. No.: HY-N0502

CAS No.: 88901-36-4

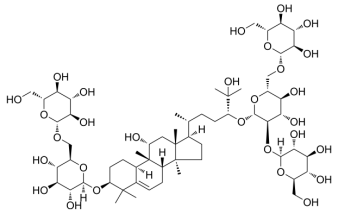
Molecular Formula: $C_{60}H_{102}O_{29}$

Molecular Weight: 1287.43

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 (77.67 mM; Need ultrasonic)
H_2O : 50 mg/mL (38.84 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	0.7767 mL	3.8837 mL	7.7674 mL
	5 mM	0.1553 mL	0.7767 mL	1.5535 mL
	10 mM	0.0777 mL	0.3884 mL	0.7767 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 (1.62 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (1.62 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (1.62 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mogroside V is a the major active constituent of a traditional Chinese medicine Siraitiae Fructus. Mogroside V reduces the intracellular reactive oxygen species (ROS) levels and enhances mitochondrial function. Mogroside V has anti-oxidative, anti-diabetic and anti-carcinogenic effects. Mogroside V can be used for diabetic diseases research[1][3].

In Vitro

Mogroside V (20 μM, 40 h) reducs the ROS levels in in vitro maturation (IVM) oocytes[1].
Mogroside V (20 μM, 40 h) can enhance mitochondrial function in oocytes[1].
Mogroside V (1-250 μM, 24 h) promots apoptosis and cell cycle arrest of pancreatic cancer cells (PANC-1 cells) and may be mediated through regulating the STAT3 signaling pathway[3].

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

Immunofluorescence[1]

Cell Line:	IVM oocytes
Concentration:	20 μM
Incubation Time:	40 h
Result:	Increased the fluorescence intensity compared to control group. Increased the red/green fluorescence intensity ratio compared to control group.

Real Time qPCR[1]

Cell Line:	IVM oocytes
Concentration:	20 μM
Incubation Time:	40 h
Result:	Increased the relative mRNA expression of SOD, CAT, PGC-1α and TFAM than in control group.

Cell Viability Assay[3]

Cell Line:	PANC-1 cells
Concentration:	1-250 μM
Incubation Time:	24 h
Result:	Increased the percentage of TUNEL-positive cells ranging from 2.91% to 92.25%.

Apoptosis Analysis[3]

Cell Line:	PANC-1 cells
Concentration:	1-250 μM
Incubation Time:	24 h
Result:	Induced apoptosis in PANC-1 cells in a concentration- and time-dependent manner

Western Blot Analysis[3]

Cell Line:	PANC-1 cells
Concentration:	0-250 μM
Incubation Time:	24 h
Result:	Increased the expression of the cyclin kinase inhibitors CDKN1A ($p21^{WAF1}$) and CDKN1B (p27) in a dose-dependent manner. Decreased the the expression of the pro-proliferative cell cycle regulators CCND1 (cyclin D1), CCNE1 (cyclin E1) and CDK2. Suppressed phosphorylation of the kinases upstream of STAT3, including that of JAK2 and TYK2.

In Vivo

Mogroside V (100 mg/kg for Oral administration) transforms to 26 metabolites by the process of dehydrogenation,

deoxidation, oxidation and isomerization in type 2 diabetes (T2D) model rats[1].

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

Animal Model:	T2D model rats[2]
Dosage:	100 mg/kg
Administration:	Oral gavage (p.o.)
Result:	Detected 28 metabolites of mogroside V compared to the blank biological samples. Displayed larger peak areas of metabolites in T2D rat plasma samples than those in healthy sample.

REFERENCES

[1]. Nie J, et al. Mogroside V improves porcine oocyte in vitro maturation and subsequent embryonic development. Theriogenology. 2020 Jan 1;141:35-40.

[2]. Zhou G, et al. The metabolism of a natural product mogroside V, in healthy and type 2 diabetic rats. J Chromatogr B Analyt Technol Biomed Life Sci. 2018 Mar 15;1079:25-33.

[3]. Liu C, et al. A natural food sweetener with anti-pancreatic cancer properties. Oncogenesis. 2016 Apr 11;5(4):e217.

[4]. Itkin M, et al. The biosynthetic pathway of the nonsugar, high-intensity sweetener mogroside V from Siraitia grosvenorii.Proc Natl Acad Sci U S A. 2016 Nov 22;113(47):E7619-E7628.

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