Gypenoside XVII

Cat. No.: HY-N0553

CAS No.: 80321-69-3

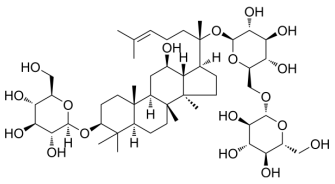
Molecular Formula: $C_{48}H_{82}O_{18}$

Molecular Weight: 947.15

Target: Estrogen Receptor/ERR; Endogenous Metabolite

Pathway: Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease

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 (105.58 mM)

H_2O : 41.67 mg/mL (44.00 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.0558 mL	5.2790 mL	10.5580 mL
5 mM	0.2112 mL	1.0558 mL	2.1116 mL
10 mM	0.1056 mL	0.5279 mL	1.0558 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 25 mg/mL (26.39 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (2.64 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.64 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.64 mM); Clear solution

BIOLOGICAL ACTIVITY

Description Gypenoside XVII, a novel phytoestrogen belonging to the gypenosides, can activate estrogen receptors.

IC_{50} & Target Estrogen receptor[1]

In Vitro The ability of Gypenoside XVII (GP-17) to prevent Ox-LDL-induced cytotoxicity is detected by cell viability assays. Gypenoside

	XVII does not demonstrate any cytotoxicity in HUVECs. Gypenoside XVII can protect HUVECs against Ox-LDL-induced apoptosis. Gypenoside XVII dose-dependently mitigates the toxic effect of Ox-LDL on HUVEC viability. The viability of HUVECs is significantly higher than that of other groups at 50 μg/mL Gypenoside XVII [1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Body weights are measured as physical measures of hormone bioactivity. Mean body weights are significantly higher in every group compared to that of the control, but there is no significant difference in body weight between the different treatments during the 10-week feeding. The mouse plasma lipid levels are also measured at the end of 10 weeks of a high-fat diet. Circulating levels of total cholesterol (TC) and low-density lipoprotein cholesterol (LDL-C) are significantly increased in the treated groups of $ApoE^{-/-}$ mice compared with those of the C57BL/6J control group; Gypenoside XVII (GP-17) and Probucol treatment substantially decreases both of these parameters relative to those of the $ApoE^{-/-}$ model group[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	For the establishment of an Ox-LDL-induced apoptosis model and measurement of Gypenoside XVII's protective effect, the HUVECs are seeded in 96-well plates at a density of 10^5 cells per mL and grown for 24 h. Then, the HUVECs are pretreated with Gypenoside XVII (6.25, 12, 25, 50, 100 μg/mL) for 12 h in serum-free endothelial cell basal medium, followed by incubation with Ox-LDL (100 μg/mL, 24 h) which does not have Gypenoside XVII. After 24 h, the treated HUVECs are incubated with 5 mg/mL MTT in fresh medium for an additional 4 h. Absorbance is measured at 570 nm using a plate reader [1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice[1] A total of 42 $ApoE^{-/-}$ mice and 12 male C57BL/6J mice with the same age and body weight (approximately 20 g in body weight and 6 weeks old) are randomly divided into 4 groups (12 mice for each group) and orally administered the following once a: C57 control group (vehicle; 0.5% sodium carboxymethylcellulose, CMC-Na); $ApoE^{-/-}$ model group (vehicle; 0.5% CMC-Na); $ApoE^{-/-}$+Gypenoside XVII group (Gypenoside XVII, 50 mg/kg via i.g.); $ApoE^{-/-}$+probucol group (Probucol, 2 mg/kg via i.g.). Probucol is an antioxidant drug used as a positive control. After two weeks of acclimatization, all the mice are fed a high-fat diet including 0.3% cholesterol and 20% pork fat for 10 weeks. They are maintained in pathogen-free conditions at approximately 22±1°C on a 12 h light-dark cycle with free access to food and water. The body weights are determined every two weeks. After 10 weeks of the treatments, all animals are anesthetized with pentobarbital sodium and killed after being deprived of food overnight. Serum is immediately separated from blood samples by centrifugation at 3600 rpm for 15 min, and the tissue samples (heart and aorta) are rapidly removed and frozen in -8°C. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Ethnopharmacol. 2023 Aug 23;117070.

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REFERENCES

[1]. Yang K, et al. Gypenoside XVII Prevents Atherosclerosis by Attenuating Endothelial Apoptosis and Oxidative Stress: Insight into the ERα-Mediated PI3K/Akt Pathway. Int J Mol Sci. 2017 Feb 9;18(2). pii: E77.

Caution: Product has not been fully validated for medical applications. For research use only.

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