Ginsenoside F1

Cat. No.: HY-N0598

CAS No.: 53963-43-2

Molecular Formula: $C_{36}H_{62}O_9$

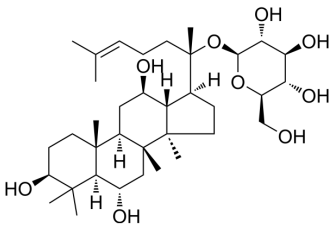
Molecular Weight: 638.87

Target: Cytochrome P450; Endogenous Metabolite

Pathway: Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (156.53 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	1.5653 mL	7.8263 mL	15.6526 mL
5 mM	0.3131 mL	1.5653 mL	3.1305 mL
10 mM	0.1565 mL	0.7826 mL	1.5653 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 (3.91 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (3.91 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (3.91 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ginsenoside F1, an enzymatically modified derivative of Ginsenoside Rg1, demonstrates competitive inhibition of CYP3A4 activity and weaker inhibition of CYP2D6 activity.

IC_{50} & Target	CYP2	CYP3	CYP3A4

In Vitro

Ginsenoside F1 has been shown to flaunt anticancer, anti-aging, and antioxidant effects and has demonstrated competitive

	inhibition of CYP3A4 activity and weaker inhibition of CYP2D6 activity. The cell viabilities are 68% at the highest concentration of ginsenoside F1 (200 μM) in MTT assays[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	ApoE$^{-/-}$ mice are fed a high fat diet and orally treated with Ginsenoside F1 (50 mg/kg/day) for 8 weeks. Ginsenoside F1 treated mice significantly reduce the lesion size compared with model group mice[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Kinase Assay [1]	Glycosylation ability is assayed with overexpressed BSGT1 enzyme and F1. The reaction mixtures contain 100 μL of 0.5 mM F1 and 100 μL of 2.5 mM UDP-glucose and 800 μL of purified enzyme (final concentration at 0.1 mg/mL) (pH 7.0). The mixtures are incubated at 30°C for 24 h. Moreover, three groups of controls are incubated under the same conditions: (1) control 1 (C1) consists of Ginsenoside F1 with BSGT1; (2) control 2 (C2) consists of BSGT1 with UDP-glucose; and (3) control 3 (C3) consists of Ginsenoside F1 with UDP-glucose[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Cell Assay [1]	B16BL6 cells are cultured in Dulbecco's modified Eagles medium supplemented with 10% fetal bovine serum and 1% Penicillin-Streptomycin at 37°C in a humidified 95% air/5% CO_2 atmosphere. Cell viability is determined for Ginsenoside F1 and metabolite 1 using MTT conversion to formazan. Cells are seeded at a density of 1×10^5 cells/well in a 96-well plate, cultured for 24 h, and treated with various concentrations from 1 μM to 200 μM of Ginsenoside F1 and metabolite 1 for 5 d. Finally, 10 μL of MTT (5 mg/mL in PBS) is added to each well. Cells are incubated at 37°C for 3 h, and then DMSO (100 μL) is added to dissolve the formazan crystals. The absorbance is measured at 570 nm with the reference wavelength of 630 nm using an ELISA reader[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [2]	Mice[2] Six-week-old (17±1 g) male C57BL/6 mice and ApoE$^{-/-}$ mice with a C57BL/6 background are maintained in a temperature-controlled facility (temperature: 22±1°C; humidity: 60%) with a 14 h light/10 h dark cycle in conventional cages. Forty mice are randomly divided into four experimental groups (n=10/group): (I) C57BL/6 N mice, the control group; (II) ApoE$^{-/-}$ mice group; (III) ApoE$^{-/-}$ mice+ Ginsenoside F1 group; (IV) ApoE$^{-/-}$ mice+Probucol group. All mice are fed with a high fat diet (HFD, 0.3% cholesterol and 20% pork fat) for 8 weeks. Ginsenoside F1 (50 mg/kg/day, i.g.) and Probucol (2 g/kg, i.g.) are dissolved in carboxymethyl cellulose sodium (CMC-Na). Oral administration is given to mice every day for 8 weeks. The control and model groups receive the aseptic 0.5% CMC-Na treatment every day (i.g., 0.1 mL/10g) [2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Wang DD, et al. Rare ginsenoside Ia synthesized from F1 by cloning and overexpression of the UDP-glycosyltransferase gene from Bacillus subtilis: synthesis, characterization, and in vitromelanogenesis inhibition activity in BL6B16 cells. J Ginseng Res. 2018 Jan;42(1):42-49.

[2]. Qin M, et al. Ginsenoside F1 Ameliorates Endothelial Cell Inflammatory Injury and Prevents Atherosclerosis in Mice through A20-Mediated Suppression of NF-kB Signaling. Front Pharmacol. 2017 Dec 22;8:953.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA