Ginsenoside Rh3

Cat. No.: HY-N0606

CAS No.: 105558-26-7

Molecular Formula: $C_{36}H_{60}O_7$

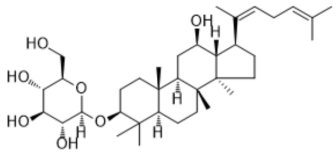
Molecular Weight: 604.86

Target: Keap1-Nrf2

Pathway: NF-κB

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 : 6.67 mg/mL (11.03 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.6533 mL	8.2664 mL	16.5328 mL
	5 mM	0.3307 mL	1.6533 mL	3.3066 mL
	10 mM	0.1653 mL	0.8266 mL	1.6533 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: 0.67 mg/mL (1.11 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 0.67 mg/mL (1.11 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Ginsenoside Rh3 is a bacterial metabolite of Ginsenoside Rg5. Ginsenoside Rh3 treatment in human retinal cells induces Nrf2 activation.

IC_{50} & Target

Nrf2[1]

In Vitro

Ginsenoside Rh3 inhibits UV-induced oxidative damages in retinal cells via activating nuclear-factor-E2-related factor 2 (Nrf2) signaling. Ginsenoside Rh3 treatment in retinal cells induces Nrf2 activation. The potential activity of Ginsenoside Rh3 is tested on Nrf2 signaling in the retinal pigment epithelium cells (RPEs). The qRT-PCR assay results demonstrate that treatment with Ginsenoside Rh3 dose-dependently increases mRNA transcription and expression of key Nrf2-regulated genes, including HO1, NQO1 and GCLC. Consequently, protein expressions of these Nrf2-dependent genes (HO1, NQO1 and

	GCLC) are also significantly increased in Ginsenoside Rh3 (3-10 μM)-treated RPEs. Notably, although Nrf2 mRNA level is unchanged after Ginsenoside Rh3 treatment, its protein level is significantly increased by Rh3[1]. EZ-Cytox assay is used to assess the effect of ginsenoside-Rh3 on SP 1-keratinocytes viability. Ginsenoside Rh3 (0.01, 0.1, 1 and 10 μM) shows no cytotoxic effect at all concentrations[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The potential effect of Ginsenoside Rh3 is examined on mouse retina, using the light-induced retinal damage model. Ginsenoside Rh3 intravitreal injection (5 mg/kg body weight, 30 min pre-treatment) significantly attenuates light-induced decrease of both a- and b-wave amplitude. The electroretinography (ERG)'s a-wave decreases to 46.03±1.62% % of control level after light exposure, which is back to 71.84±7.51% with Ginsenoside Rh3 administration. The b-wave is 40.19±3.34% of control level by light exposure, and Rh3 intravitreal injection brings back to 80.01±2.37% of control level[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	SP-1 keratinocytes are seeded in 96 well plates (2×10^4 cells/well). After 24 h, the media is replaced with media containing various concentrations of (A) SKRG, or (B) Ginsenoside Rh3 (0.01, 0.1, 1 and 10 μM). Control cells are treated with DMSO at a final concentration of 0.1%. After 24 h, the media containing the compounds or DMSO is replaced with media containing 10% EZ-Cytox. The cells are then incubated at 37°C for 1 h, and the absorbance is measured using a microplate reader at a wavelength of 450 nm. All assays are performed in triplicate[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice[1] The BALB/c mice (Male, 5-6 week old, 17-18 g weight) are used. The pupillary dilation is performed before exposure to 5000 lx of white fluorescent light. Thirty min before light exposure, Ginsenoside Rh3 (at 5 mg/kg body weight) are injected intravitreally to the right eye. ERG recording after light exposure is also reported early. The b-wave amplitude is measured from the trough of the a-wave to the peak of the b-wave, and the amplitude of the a-wave is measured from the initial baseline. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Free Radic Biol Med. 2018 Mar;117:238-246.

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REFERENCES

[1]. Tang CZ, et al. Activation of Nrf2 by Ginsenoside Rh3 protects retinal pigment epithelium cells and retinal ganglion cells from UV. Free Radic Biol Med. 2018 Mar;117:238-246.

[2]. Chung I, et al. Inhibitory mechanism of Korean Red Ginseng on GM-CSF expression in UVB-irradiated keratinocytes. J Ginseng Res. 2015 Oct;39(4):322-30.

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

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