Web: www.taiclone.com
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Ginsenoside Rg3

Catalog No: tcsc2986

Available Sizes

Size: 10mg

Size: 50mg

Size: 100mg

Specifications

CAS No:
14197-60-5

Formula:
$C_{42}H_{72}O_{13}$

Pathway:
Neuronal Signaling;Immunology/Inflammation;Membrane Transporter/Ion Channel;Membrane Transporter/Ion Channel;NF-κB

Target:
Amyloid-β;COX;Potassium Channel;Sodium Channel;NF-κB

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
20(S)-Ginsenoside-Rg3;Rg3;S-Ginsenoside Rg3

Observed Molecular Weight:
785.01

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Product Description

Ginsenoside Rg3 is the main component of Red ginseng. Ginsenoside Rg3 inhibits **Na^+** and **hKv1.4** channel with IC_{50}s of 32.2±4.5 and 32.6±2.2 μM, respectively. Ginsenoside Rg3 also inhibits **Aβ** levels, **NF-κB** activity, and **COX-2** expression.

IC50 & Target: IC50: 32.2±4.5 μM (Na^+ channel)[1]

IC50: 32.6±2.2 μM (hKv1.4 channel)[2]

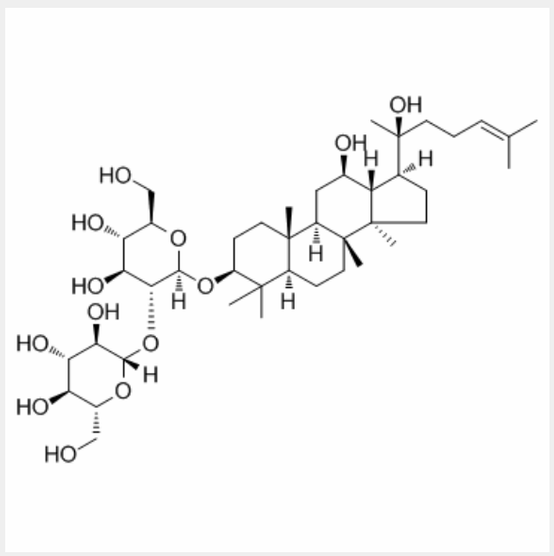
NF-κB p65[3]

COX-2[3]

Aβ40 and Aβ42[4]

In Vitro: Ginsenoside Rg3 plays an important role in its effect on the Na^+ channel. Treatment with Ginsenoside Rg3 reversibly inhibits the inward Na+ peak current (INa) with an IC_{50} of 32.2±4.5 μM, and the inhibition is voltage-dependent[1]. Ginsenoside Rg3 at 100 μM inhibits the hKv1.4 channel currents by an average of 65%.The Ginsenoside Rg3 effect is concentration-dependent and reversible. The IC_{50} value and Hill coefficient are 32.6±2.2 μM and 1.59±0.13, respectively[2]. Ginsenoside Rg3 shows the significant inhibition of NF-κB activity thereby reduced COX-2 expression. To examine the cytotoxicity of Ginsenoside Rg3 on IL-1β-induced inflamed A549 cells, the cells are firstly treated with IL-1β (10 ng/mL) for 4 h and treated with 100 to 900 ng/mL concentration of Ginsenoside Rg3 for 12 h. Cell viability is analyzed using an MTT assay. There is no observed cytotoxicity of Ginsenoside Rg3 in IL-1β-induced inflamed A549 cells compared to only PBS-treated cells (Con).To obtain the anti-inflammatory effects of Ginsenoside Rg3 on inflammation induced human lung epithelial cells, A549 cells inflammation is induced by IL-1β (10 ng/mL) and then treated by 5 μM of Dexamethasone (Dex) or 900 nM of Rg3. The NF-κB activation is analyzed by a western blot analysis to evaluate the effect of Ginsenoside Rg3 treatment on A549 cells. Phospho-NF-κB p65/total NF-κB p65 densitometry in the cells treated with Rg3 shows the significant decrease compared to IL-1β-induced inflamed A549 cells. The meaning of reducing the ratio of p-p65/p65 by Rg3 treatment is associated with NF-κB activation. Ginsenoside Rg3 also downregulates the expression of COX-2 effectively[3].

In Vivo: Ginsenoside Rg3 ((20S)-Rg3) is an Aβ-lowering Natural Compound. APP/PS1 mice are treated with Ginsenoside Rg3 once a day for 4 weeks by intraperitoneal injection (10 mg/kg/day). Aβ ELISA analysis of brain tissues reveal that Ginsenoside Rg3 treatment results in a significant reduction of Aβ40 and Aβ42 in the brain[4].



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