Web: www.taiclone.com
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Ginsenoside Rb1

Catalog No: tcsc3829

Available Sizes

Size: 5mg

Size: 10mg

Specifications

CAS No:
41753-43-9

Formula:
$C_{54}H_{92}O_{23}$

Pathway:
Membrane Transporter/Ion Channel;Autophagy;Immunology/Inflammation;Protein Tyrosine Kinase/RTK;NF-κB;Autophagy

Target:
Na+/K+ ATPase;Autophagy;IRAK;IRAK;NF-κB;Mitophagy

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
Gypenoside III

Observed Molecular Weight:
1109.29

Product Description

Ginsenoside Rb1, a main constituent of the root of Panax ginseng, inhibits **Na^+, K^+-ATPase** activity with an **IC_{50}** of 6.3±1.0 μM.

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Ginsenoside also inhibits **IRAK-1** activation and phosphorylation of **NF-κB p65** .

IC50 & Target: IC50: 6.3±1.0 μM (Na^+, K^+-ATPase)[1]

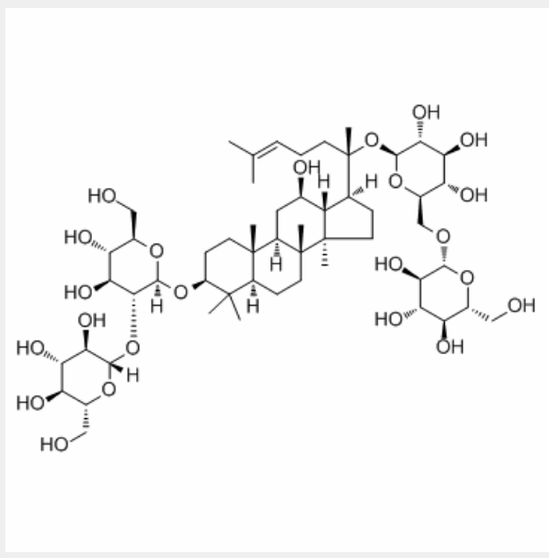
IRAK-1[2]

NF-κB p65[3]

In Vitro: Rat brain microsomal Na^+, K^+-ATPase activity is inhibited significantly and rapidly by Ginsenoside Rb1. The IC_{50} of Ginsenoside Rb1 for Na^+,K^+-ATPase is 6.3±1.0 μM. The inhibition is enhanced with increasing the concentration of Ginsenoside Rb1 or decreasing that of Na^+ and K^+. Kinetic analysis reveals that Ginsenoside is an uncompetitive inhibitor with respect to ATP[1].

Ginsenoside Rb1 significantly inhibits the activation of interleukin-1 receptor-associated kinase-1 (IRAK-1), IKK-β, NF-κB, and MAP kinases (ERK, JNK, and p-38); however, interaction between LPS and Toll-like receptor-4, IRAK-4 activation and IRAK-2 activation are unaffected[2]. Ginsenoside Rb1 is an ingredient of a Chinese medicine *Panax ginseng*. Ginsenoside Rb1 is a major bioactive compound in the regulating pregnane X receptor (PXR)/NF-κB signaling. Ginsenoside Rb1 is the compound with potent anti-inflammatory activity in ginseng saponin extract (GSE). The concentration for Ginsenoside Rb1 (10 μM) is optimized from a preliminary study to ensure sufficient anti-inflammatory activity and without apparent cytotoxicity. Ginsenoside Rb1 significantly reduces TNF-α-induced upregulation of IL-1β and iNOS mRNA levels, and restores the mRNA levels of PXR and CYP3A4 in LS174T cells. TNF-α causes a significant reduction in PXR protein levels and increase in the ratio of phosphorylated to total NF-κB p65, both of which are significantly abrogated by Ginsenoside Rb1[3].

In Vivo: Ginsenoside Rb1 at the both doses of 30 mg/kg and 60 mg/kg significantly attenuates the histological lung injury. Ginsenoside Rb1 at the dose of 30 mg/kg and 60 mg/kg both significantly attenuates the histological intestine injury[4]. Ginsenoside Rb1 (Rb1), an ingredient of a Chinese medicine *Panax ginseng*, has beneficial effects on mesentery microvascular hyperpermeability induced by Lipopolysaccharide (LPS) and the underlying mechanisms. In some rats, Ginsenoside Rb1 (5 mg/kg per hour) is administrated through the left jugular vein 30 min after LPS infusion. Ginsenoside Rb1 decreases caveolae number in endothelial cells of microvessels. Ginsenoside Rb1 ameliorates microvascular hyperpermeability after the onset of endotoxemia and improves intestinal edema through inhibiting caveolae formation and junction disruption, which is correlated to suppression of NF-κB and Src activation[5].



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