Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

# Ginsenoside Rd

## Catalog No: tcsc3839

### Available Sizes

**Size:** 5mg

**Size:** 10mg

### Specifications

**CAS No:**
52705-93-8

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

**Pathway:**
Membrane Transporter/Ion Channel;Immunology/Inflammation;Metabolic Enzyme/Protease;NF-κB

**Target:**
Calcium Channel;COX;Cytochrome P450;NF-κB

**Purity / Grade:**
>98%

**Solubility:**
10 mM in DMSO

**Alternative Names:**
Gypenoside VIII

**Observed Molecular Weight:**
947.15

## Product Description

Ginsenoside Rd inhibits TNFα-induced **NF-κB** transcriptional activity with an **$IC_{50}$** of 12.05±0.82 μM in HepG2 cells. Ginsenoside Rd inhibits expression of **COX-2** and **iNOS** mRNA. Ginsenoside Rd also inhibits **$Ca^{2+}$** influx. Ginsenoside Rd inhibits **CYP2D6**, **CYP1A2**, **CYP3A4**

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, and **CYP2C9**, with **$IC_{50}$**s of 58.0±4.5 μM, 78.4±5.3 μM, 81.7±2.6 μM, and 85.1±9.1 μM, respectively.

IC50 & Target: IC50: 12.05±0.82 μM (NF-κB, in HepG2 cells)[1]

COX-2, iNOS[1]

$Ca^{2+}$ influx (L-type calcium channel)[2]

IC50: 58.0±4.5 μM (CYP2D6), 78.4±5.3 μM (CYP1A2), 81.7±2.6 μM (CYP3A4), 85.1±9.1 μM (CYP2C9), >100 μM (CYP2A6)[4]

***In Vitro:*** Ginsenoside Rd is one of the most abundant ingredients of *Panax ginseng*. Ginsenoside Rd significantly inhibits TNF-α-induced NF-κB transcriptional activity with an $IC_{50}$ of 12.05±0.82 in HepG2 cells. Ginsenoside Rd also inhibits expression of COX-2 and iNOS mRNA and iNOS promoter activity in a dose-dependent manner. To determine nontoxic concentrations, HepG2 cells are treated with various concentrations (0.1, 1, and 10 μM) of compounds (e.g., Ginsenoside Rd) and cell viability is measured using an MTS assay. No compounds are significantly cytotoxic at up to 10 μM, indicating that NF-κB inhibition is not due to cell toxicity[1]. Ginsenoside Rd is one of the most abundant ingredients of *Panax ginseng*, protects the heart via multiple mechanisms including the inhibition of $Ca^{2+}$ influx. Ginsenoside Rd reduces $I_{Ca,L}$ peak amplitude in a concentration-dependent manner ($IC_{50}$=32.4±7.1 μM)[2]. Ginsenoside Rd exhibits an inhibition against the activity of CYP2D6 in human liver microsomes with an $IC_{50}$ of 58.0±4.5 μM, a weak inhibition against the activity of CYP1A2, CYP3A4, and CYP2C9 in human liver microsomes with $IC_{50}$s of 78.4±5.3, 81.7±2.6, and 85.1±9.1, respectively, and an even weaker inhibition against the activity of CYP2A6 in human liver microsomes with an $IC_{50}$ value of more than 100 μM[4].

***In Vivo:*** Ginsenosides Rd is a major compound isolated from *Gynostemma pentaphyllum* that holistically improves gut microenvironment and induces anti-polyposis in $Apc^{Min/+}$ mice. Six-weeks-old mice are subjected to Ginsenoside Rd treatment, before the appearance of the intestinal polyps. All the mice are monitored for food intake, water consumption, and weight changes. Throughout the experiment, no Rb3/ Ginsenoside Rd-associated weight loss in mice is observed. In addition, none of the treated mice show variations in food and water consumption. Whereas, the number and size of the polyps are effectively reduced by Ginsenoside Rd treatments[3].