

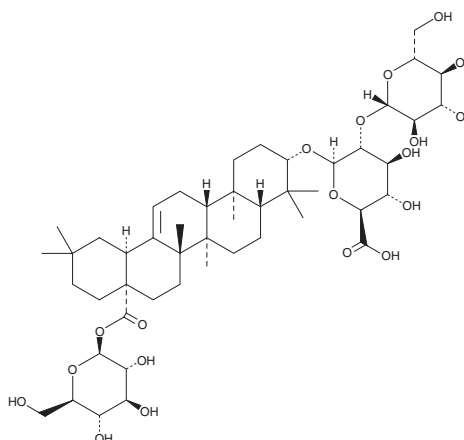
# PRODUCT INFORMATION



## Ginsenoside Ro

Item No. 25137

**CAS Registry No.:** 34367-04-9  
**Formal Name:** (3 $\beta$ )-28-( $\beta$ -D-glucopyranosyloxy)-  
28-oxoolean-12-en-3-yl  
2-O- $\beta$ -D-glucopyranosyl- $\beta$ -D-  
glucopyranosiduronic acid  
**Synonym:** Chikusetsusaponin V  
**MF:** C<sub>48</sub>H<sub>76</sub>O<sub>19</sub>  
**FW:** 957.1  
**Purity:**  $\geq$ 98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years  
**Item Origin:** Plant/*Panax ginseng*



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Ginsenoside Ro is supplied as a crystalline solid. Aqueous solutions of ginsenoside Ro can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ginsenoside Ro in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Ginsenoside Ro is a non-steroid glycoside that has been found in plants of the genus *Panax* and has anti-inflammatory, antithrombotic, and antiviral biological activities.<sup>1-6</sup> It inhibits LPS-induced release of reactive oxygen species (ROS) and nitric oxide (NO) as well as inducible nitric oxide synthase (iNOS) and COX-2 protein expression in RAW 264.7 murine macrophages when used at a concentration of 200  $\mu$ M.<sup>2</sup> Ginsenoside Ro dose-dependently inhibits human platelet aggregation induced by thrombin (Item No. 13188) *in vitro* and thrombin-induced disseminated intravascular coagulation (DIC) in rats when administered at a dose of 100 mg/kg.<sup>3,4</sup> It increases the 20-day survival of Sendai virus-infected mice when administered at a dose of 1 mg per day for three days prior to infection.<sup>5</sup> Topical administration of ginsenoside Ro (0.2 mg per animal) also stimulates hair regrowth after shaving in a mouse model of slowed hair regrowth.<sup>6</sup>

### References

1. Attele, A.S., Wu, J.A., and Yuan, C.S. Ginseng pharmacology: Multiple constituents and multiple actions. *Biochem. Pharmacol.* **58(11)**, 1685-1693 (1999).
2. Kim, S., Oh, M.-H., Kim, B.-S., *et al.* Upregulation of heme oxygenase-1 by ginsenoside Ro attenuates lipopolysaccharide-induced inflammation in macrophage cells. *J. Ginseng Res.* **39(4)**, 365-370 (2015).
3. Shin, J.-H., Kwon, H.-W., Cho, H.-J., *et al.* Vasodilator-stimulated phosphoprotein-phosphorylation by ginsenoside Ro inhibits fibrinogen binding to  $\alpha$ IIb/ $\beta$ <sub>3</sub> in thrombin-induced human platelets. *J. Ginseng Res.* **40(4)**, 359-365 (2016).
4. Matsuda, H., Namba, K., Fukuda, S., *et al.* Pharmacological study on *Panax ginseng* C. A. Meyer. IV. Effects of red ginseng on experimental disseminated intravascular coagulation. (3). Effect of ginsenoside-Ro on the blood coagulative and fibrinolytic system. *Chem. Pharm. Bull. (Tokyo)* **34(5)**, 2100-2104 (1986).
5. Yoo, Y.C., Lee, J., Park, S.R., *et al.* Protective effect of ginsenoside-Rb2 from Korean red ginseng on the lethal infection of haemagglutinating virus of Japan in mice. *J. Ginseng Res.* **37(1)**, 80-86 (2013).
6. Murata, K., Takeshita, F., Samukawa, K., *et al.* Effects of ginseng rhizome and ginsenoside Ro on testosterone 5 $\alpha$ -reductase and hair re-growth in testosterone-treated mice. *Phytother. Res.* **26(1)**, 48-53 (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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