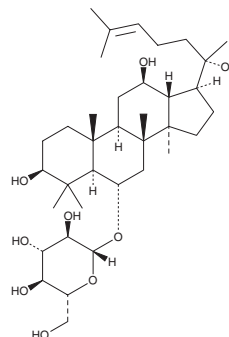


# PRODUCT INFORMATION

## Ginsenoside Rh<sub>1</sub>

Item No. 27318

**CAS Registry No.:** 63223-86-9  
**Formal Name:** (3 $\beta$ ,6 $\alpha$ ,12 $\beta$ )-3,12,20-trihydroxydammar-24-en-6-yl,  $\beta$ -D-glucopyranoside  
**Synonyms:** 20(S)-Ginsenoside Rh<sub>1</sub>, Prosapogenin A<sub>2</sub>, Sanchinoside Rh<sub>1</sub>  
**MF:** C<sub>36</sub>H<sub>62</sub>O<sub>9</sub>  
**FW:** 638.9  
**Purity:**  $\geq$ 98%  
**Supplied as:** A 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 Rh<sub>1</sub> is supplied as a solid. A stock solution may be made by dissolving the ginsenoside Rh<sub>1</sub> in the solvent of choice, which should be purged with an inert gas. Ginsenoside Rh<sub>1</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ginsenoside Rh<sub>1</sub> in ethanol is approximately 10 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Ginsenoside Rh<sub>1</sub> is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ginsenoside Rh<sub>1</sub> should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Ginsenoside Rh<sub>1</sub> has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Ginsenoside Rh<sub>1</sub> is a steroid glycoside and saponin that has been found in red ginseng and has diverse biological activities.<sup>1,2</sup> It inhibits expression of matrix metalloproteinase-1 (MMP-1), MMP-3, and MMP-9 induced by phorbol 12-myristate 13-acetate (PMA; Item No. 10008014) in U87MG and U373MG human astrogloma cells in a concentration-dependent manner.<sup>2</sup> Ginsenoside Rh<sub>1</sub> (300  $\mu$ M) also inhibits PMA-induced invasion and migration of these cell lines in Matrigel™ invasion and wound healing assays, respectively. It inhibits LPS-induced increases in nitrite accumulation, prostaglandin E<sub>2</sub> (PGE<sub>2</sub>; Item No. 14010) synthesis, and inducible nitric oxide synthase (iNOS) protein levels in RAW 264.7 cells and inhibits histamine release induced by compound 48/80 (Item No. 22173) in rat peritoneal mast cells (IC<sub>50</sub> = 37  $\mu$ M).<sup>3</sup> Ginsenoside Rh<sub>1</sub> (25 mg/kg, i.p.) inhibits IgE-induced passive cutaneous anaphylaxis reactions in mice by 87%. Ginsenoside Rh<sub>1</sub> is also a metabolite of ginsenoside Re (Item No. 15330) and ginsenoside Rg<sub>1</sub> (Item No. 15315) formed by intestinal microflora.<sup>2,4</sup>

### References

1. Tam, D.N.H., Truong, D.H., Nguyen, T.T.H., *et al.* *Planta Med.* **84**(3), 139-152 (2018).
2. Jung, J.S., Ahn, J.H., Le, T.K., *et al.* *Neurochem. Int.* **63**(2), 80-86 (2013).
3. Park, E.K., Choo, M.K., Han, M.J., *et al.* *Int. Arch. Allergy. Immunol.* **133**(2), 113-120 (2004).
4. Peng, D., Wang, H., Qu, C., *et al.* *Chin. Med.* **7**, 2 (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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