

PRODUCT INFORMATION

Ginsenoside Rb₁

Item No. 15319

CAS Registry No.: 41753-43-9
Formal Name: 20-[(6-O-β-D-glucopyranosyl-β-D-glucopyranosyl)oxy]-12β-hydroxydammar-24-en-3β-yl 2-O-β-D-glucopyranosyl-β-D-glucopyranosid

Synonyms: Gypenoside III, NSC 310103

MF: C₅₄H₉₂O₂₃

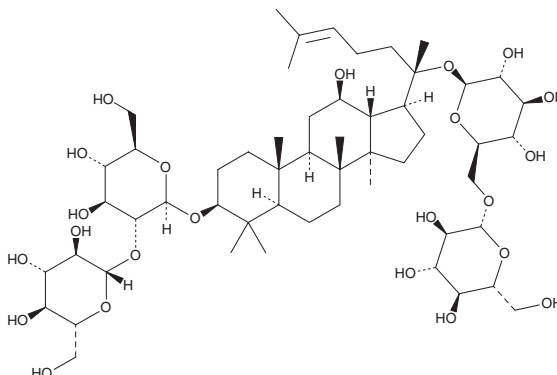
FW: 1,109.3

Purity: ≥98%

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥4 years



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

Laboratory Procedures

Ginsenoside Rb₁ is supplied as a crystalline solid. A stock solution may be made by dissolving the ginsenoside Rb₁ in the solvent of choice. Ginsenoside Rb₁ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of ginsenoside Rb₁ in these solvents is approximately 0.1, 10, and 15 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of ginsenoside Rb₁ can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of ginsenoside Rb₁ in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Ginsenoside Rb₁ is a triterpene saponin that has been found in *P. ginseng* and has diverse biological activities.¹⁻⁵ It decreases apoptosis and increases in protein kinase A (PKA), PKC, caspase-3, and caspase-9 levels induced by isoproterenol (Item No. 15592) in H9c2 rat cardiomyocytes when used at a concentration of 100 μM.¹ Ginsenoside Rb₁ (1 μM) inhibits glucose-induced cytotoxicity and production of reactive oxygen species (ROS) in primary rat hippocampal neurons.² It inhibits LPS-induced activation of IL-1 receptor-associated kinase 1 (IRAK1), IKKβ, NF-κB, as well as the MAP kinases ERK, JNK, and p38, in mouse peritoneal lavage fluid when used at a concentration of 100 μM.⁴ Ginsenoside Rb₁ (10 mg/kg for 30 days) increases hippocampus nestin and glial fibrillary acidic protein (GFAP) levels, markers of neural stem cells and astrocytes respectively, in a rat model of Alzheimer's disease induced by amyloid-β (1-40) (Aβ40).³ It decreases high-fat diet-induced increases in liver weight, hepatic triglyceride accumulation, serum fasting glucose levels, and serum LDL levels in a mouse model of obesity when administered at a dose of 200 mg/kg per day.⁵

References

1. Wang, X.-F., Liu, X., Zhou, Q.-M., et al. *Evid. Based Complement. Alternat. Med.* **2013**, 454389 (2013).
2. Liu, D., Zhang, H., Gu, W., et al. *PLoS One* **8(11)**, e793399 (2013).
3. Zhao, J., Lu, S., Yu, H., et al. *Brain Res.* **1678**, 187-194 (2018).
4. Joh, E.-H., Lee, I.-A., Jung, I.-H., et al. *Biochem. Pharmacol.* **82(3)**, 278-286 (2011).
5. Yang, X., Dong, B., An, L., et al. *Front. Pharmacol.* **12**, 756491 (2021).

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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