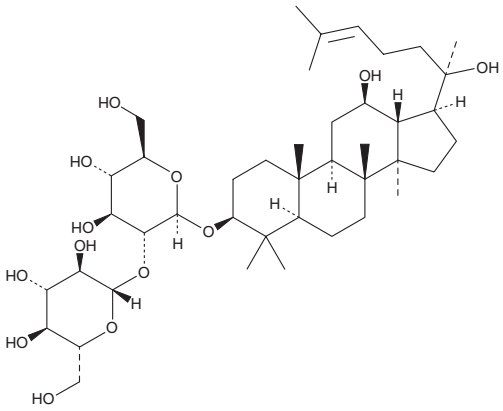
PRODUCT INFORMATION

20(R)-Ginsenoside Rg_3

Item No. 24978



CAS Registry No.:	38243-03-7
Formal Name:	12β,20R-dihydroxydammar-24-en-3β-yl 2-O-β-D-glucopyranosyl-β-D-glucopyranoside
Synonym:	20(R)-Propanaxadiol
MF:	$C_{42}H_{72}O_{13}$
FW:	785.0
Purity:	≥95%
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

20(R)-Ginsenoside Rg_3 is supplied as a crystalline solid. A stock solution may be made by dissolving the 20(R)-ginsenoside Rg_3 in the solvent of choice, which should be purged with an inert gas. 20(R)-Ginsenoside Rg_3 is slightly soluble in ethanol.

Description

20(R)-Ginsenoside Rg_3 is a saponin that has been found in *P. ginseng* and inhibits angiogenesis.[1] 20(R)-Ginsenoside Rg_3 (0.001-1 µM) dose-dependently reduces proliferation, capillary tube branching, and the expression of matrix metalloproteinase-9 (MMP-9) and MMP-2 in human umbilical vein endothelial cells (HUVECs). It reduces tumor cell invasion of MM1 rat hepatoma, B16FE7 mouse melanoma, OC-10 human lung carcinoma, and PSN-1 human pancreatic adenocarcinoma cells *in vitro* by 89, 73.7, 84.2, and 59.1%, respectively, when used at a concentration of 25 µM.[2] However, it does not inhibit the proliferation of MM1 cells when used at concentrations ranging from 1.6 to 64 µM. 20(R)-Ginsenoside Rg_3 (20 mg/kg) reduces tumor volume, increases the tumor necrosis rate by approximately 16%, and increases survival in a human Lewis lung carcinoma mouse xenograft model.[3] It also reduces the total number of B16-BL6 melanoma cell and 26-M3.1 colon carcinoma cell lung colonies in mice by 27 and 51%, respectively, when administered at a dose of 100 µg.[4] Topical administration of 20(R)-ginsenoside Rg_3 (0.05% w/v) reduces ear thickness by 47.5% compared with control animals in a mouse model of oxazolone-induced contact dermatitis and reduces expression of COX-2, IL-4, IL-1, IFN, and TNF mRNA by greater than 25%.[5]

References

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2. Shinkai, K., Akedo, H., Mukai, M., *et al.* Inhibition of *in vitro* tumor cell invasion by ginsenoside Rg_3. *Jpn. J. Cancer Res.* **87(4)**, 357-362 (1996).
3. Liu, T.G., Huang, Y., Cui, D.D., *et al.* Inhibitory effect of ginsenoside Rg_3 combined with gemcitabine on angiogenesis and growth of lung cancer in mice. *BMC Cancer* **9**, 250 (2009).
4. Mochizuki, M., Yoo, Y.C., Matsuzawa, K., *et al.* Inhibitory effect of tumor metastasis in mice by saponins, ginsenoside-Rb2, 20(R)- and 20(S)-ginsenoside-Rg3, of red ginseng. *Biol. Pharm. Bull.* **18(9)**, 1197-1202 (1995).
5. Bae, E.A., Han, M.J., Shin, Y.W., *et al.* Inhibitory effects of Korean red ginseng and its genuine constituents ginsenosides Rg_3, Rf, and Rh2 in mouse passive cutaneous anaphylaxis reaction and contact dermatitis models. *Biol. Pharm. Bull.* **29(9)**, 1862-1867 (2006).

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