

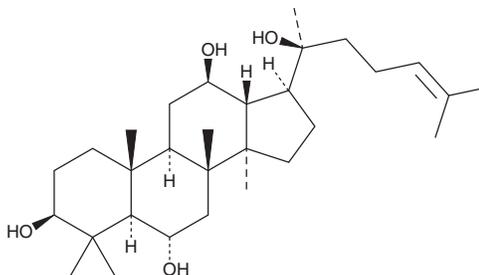
# PRODUCT INFORMATION



## 20(S)-Protopanaxatriol

Item No. 29073

**CAS Registry No.:** 34080-08-5  
**Formal Name:** (3 $\beta$ ,6 $\alpha$ ,12 $\beta$ )-dammar-24-ene-3,6,12,20-tetrol  
**Synonyms:** 20(S)-APPT, 20(S)-PPT  
**MF:** C<sub>30</sub>H<sub>52</sub>O<sub>4</sub>  
**FW:** 476.7  
**Purity:**  $\geq$ 95%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years  
**Item Origin:** Plant/Ginseng Radix et Rhizoma



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

### Laboratory Procedures

20(S)-Protopanaxatriol is supplied as a crystalline solid. A stock solution may be made by dissolving the 20(S)-protopanaxatriol in the solvent of choice, which should be purged with an inert gas. 20(S)-Protopanaxatriol is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 20(S)-protopanaxatriol in these solvents is approximately 30 mg/ml.

20(S)-Protopanaxatriol is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 20(S)-protopanaxatriol should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 20(S)-Protopanaxatriol has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

20(S)-Protopanaxatriol is an active aglycone metabolite of various panaxatriol ginsenosides, including ginsenoside Re (Item No. 15330), ginsenoside Rf (Item No. 23667), ginsenoside Rg<sub>1</sub> (Item No. 15315), ginsenoside Rg<sub>2</sub> (Item No. 15331), and ginsenoside Rh<sub>1</sub> (Item No. 27318).<sup>1</sup> It is cytotoxic to HL-60 cancer cells (IC<sub>50</sub> = 16  $\mu$ M).<sup>2</sup> 20(S)-Protopanaxatriol inhibits the proliferation of human umbilical vein endothelial cells (HUVECs; EC<sub>50</sub> = 6.64  $\mu$ g/ml).<sup>3</sup> It inhibits LPS-induced increases in the protein levels of COX-2 and inducible nitric oxide synthase (iNOS) and decreases LPS-induced NF- $\kappa$ B activity in RAW 264.7 cells when used at concentrations ranging from 1 to 20  $\mu$ M.<sup>4</sup>

### References

1. Helms, S. Cancer prevention and therapeutics: Panax ginseng. *Altern. Med. Rev.* **9(3)**, 259-274 (2004).
2. Tian, Y., Guo, H., Han, J., et al. Microbial transformation of 20(S)-protopanaxatriol by *Mucor spinosus*. *J. Nat. Prod.* **68(5)**, 678-680 (2005).
3. Usami, Y., Liu, Y.-N., Lin, A.-S., et al. Antitumor agents. 261. 20(S)-Protopanaxadiol and 20(s)-protopanaxatriol as antiangiogenic agents and total assignment of <sup>1</sup>H NMR spectra. *J. Nat. Prod.* **71(3)**, 478-481 (2008).
4. Oh, G.S., Pae, H.O., Choi, B.M., et al. 20(S)-Protopanaxatriol, one of ginsenoside metabolites, inhibits inducible nitric oxide synthase and cyclooxygenase-2 expressions through inactivation of nuclear factor- $\kappa$ B in RAW 264.7 macrophages stimulated with lipopolysaccharide. *Cancer Lett.* **205(1)**, 23-29 (2004).

**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.

**WARRANTY AND LIMITATION OF REMEDY**  
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