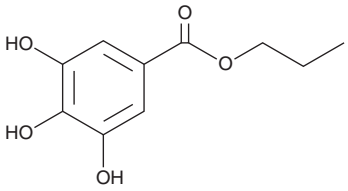
PRODUCT INFORMATION

Propyl Gallate

Item No. 22293

CAS Registry No.: 121-79-9
Formal Name: 3,4,5-trihydroxy-benzoic acid, propyl ester
Synonyms: antioxidant PG, Marupi Gallate, NSC 2626
MF: $C_{10}H_{12}O_5$
FW: 212.2
Purity: ≥98%
UV/Vis.: λ_{max}: 273 nm
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

Propyl gallate (PG) is supplied as a crystalline solid. A stock solution may be made by dissolving the PG in the solvent of choice, which should be purged with an inert gas. PG is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of PG in these solvents is approximately 10, 15, and 20 mg/ml, respectively.

PG is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, PG should first be dissolved in DMF and then diluted with the aqueous buffer of choice. PG has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

PG is an antioxidant with antimicrobial activity. It is hepatoprotective *in vitro* and *in vivo*, preventing CCl_4 induced lipoperoxidation and reduction in polysomes in rat liver.[1,2] PG (100 mg/kg, i.p.) increases expression of HIF-1α, EPO, and VEGF mRNA levels and the number of normal neurons in rat brains after 8 minutes of forebrain ischemia.[3] PG in combination with potassium sorbate is bactericidal and bacteriostatic against *S. aureus* strains known to produce enterotoxins in food.[4] PG is commonly added to foods to prevent autoxidation and microbial growth.

References

1. Gravela, E., and Dianzani, M.U. Studies on the mechanism of CCl_4-induced polyribosomal damage. *FEBS Lett.* **9(2)**, 93-96 (1970).
2. Gravela, E., Gabriel, L., and Ugazio, G. Protection by glutathione and propyl gallate on the impaired *in vitro* amino acid incorporation into liver microsomal protein of CCL_4 -poisoned rats. *Biochem. Pharmacol.* **20(8)**, 2065-2070 (1971).
3. Kawano, Y., Kawaguchi, M., Hirota, K., *et al.* Effects of n-propyl gallate on neuronal survival after forebrain ischemia in rats. *Resuscitation* **83(2)**, 249-252 (2012).
4. Fung, D.Y.C., Lin, C.C.S., and Gailani, M.B. Effect of phenolic antioxidants on microbial growth. *Crit. Rev. Microbiol.* **12(2)**, 153-183 (1985).

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