

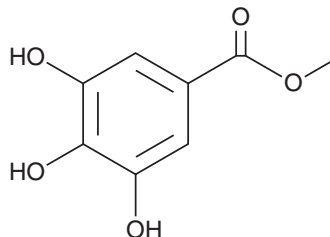
PRODUCT INFORMATION



Methyl Gallate

Item No. 19951

CAS Registry No.:	99-24-1
Formal Name:	3,4,5-trihydroxy-benzoic acid, methyl ester
Synonyms:	Gallic Acid methyl ester, NSC 363001
MF:	C ₈ H ₈ O ₅
FW:	184.1
Purity:	≥98%
UV/Vis.:	λ _{max} : 218, 274 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/ <i>Galla chinensis</i> (semisynthetic)



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

Laboratory Procedures

Methyl gallate is supplied as a crystalline solid. A stock solution may be made by dissolving the methyl gallate in the solvent of choice, which should be purged with an inert gas. Methyl gallate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of methyl gallate in these solvents is approximately 10, 15, and 25 mg/ml, respectively.

Methyl gallate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, methyl gallate should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Methyl gallate 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

Methyl gallate is a phenol that has been found in *Meliaceae* and has diverse biological activities.¹⁻⁴ It reduces adipogenic hormonal stimulation-induced lipid accumulation in 3T3-L1 cells when used at a concentration of 50 μM.¹ Methyl gallate is active against *V. cholerae* *in vitro* (MIC = 32 μg/ml) and reduces *V. cholerae*-induced intestinal fluid accumulation in suckling mice when administered at doses of 50, 100, and 200 mg/kg.² It reduces tumor growth and decreases the number of intratumor CD25⁺Foxp3^{high} regulatory T cells (Tregs) in an EL-4 model of murine lymphoma.³ Methyl gallate (0.7, 7, and 70 mg/kg) reduces knee joint edema and leukocyte, neutrophil, and mononuclear cell infiltration in a mouse model of zymosan-induced arthritis.⁴

References

1. Jeon, M.J., Rahman, N., and Kim, Y.-S. Wnt/β-catenin signaling plays a distinct role in methyl gallate-mediated inhibition of adipogenesis. *Biochem. Biophys. Res. Commun.* **479**(1), 22-27 (2016).
2. Bag, P.K., Roy, N., Acharyya, S., et al. *In vivo* fluid accumulation-inhibitory and anti-inflammatory and *in vitro* biofilm-inhibitory activities of methyl gallate isolated from *Terminalia chebula* against fluoroquinolones resistant *Vibrio cholerae*. *Microb. Pathog.* **128**, 41-46 (2019).
3. Lee, H. Lee, H., Kwon, Y., et al. Methyl gallate exhibits potent antitumor activities by inhibiting tumor infiltration of CD4⁺CD25⁺ regulatory T cells. *J. Immunol.* **185**(11), 6698-6705 (2010).
4. Correa, L.B., Pijdua, T.A., Seito, L.N., et al. Anti-inflammatory effect of methyl gallate on experimental arthritis: Inhibition of neutrophil recruitment, production of inflammatory mediators, and activation of macrophages. *J. Nat. Prod.* **79**(6), 1554-1566 (2016).

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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