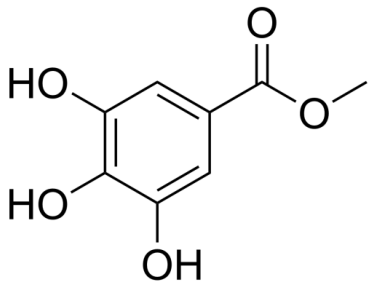
Data Sheet

Product Name:	Methyl gallate
Cat. No.:	CS-0018330
CAS No.:	99-24-1
Molecular Formula:	$C_8H_8O_5$
Molecular Weight:	184.15
Target:	Bacterial; HIV; Reactive Oxygen Species
Pathway:	Anti-infection; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Solubility:	DMSO : 100 mg/mL (ultrasonic)



BIOLOGICAL ACTIVITY:

Methyl gallate is a plant phenolic with antioxidant, anticancer, and anti-inflammatory activities. Methyl gallate also shows **bacterial** inhibition activity. Methyl gallate also has anti-**HIV-1** and **HIV-1** enzyme inhibitory activities. IC50 & Target: Bacterial[1] ***In Vitro:*** The growth of ***A. viscosus*** is inhibited completely by a low dose of Methyl gallate (MIC=1 mg/mL). ***S. mutans*** and ***. sobrinus*** show intermediate sensitivity to Methyl gallate (MIC=2-4 mg/mL), whereas the growth of ***Lactobacillus spp.*** is inhibited completely at a relatively high concentration (MIC=8 mg/mL)[1]. Methyl gallate, in a concentration of 100 mM, could alleviate lipid peroxidation of the cells exposed to a short-term H_2O_2 treatment. In addition, Methyl gallate-treated cells could prevent intracellular glutathione (GSH) from being depleted following an exposure of H_2O_2 (8.0 mM) for a 3 h period[2]. Methyl gallate inhibits Treg cell-suppressive effects on effector CD4+ T cells and Treg migration toward tumor environment. Furthermore, forkhead box P3 (Foxp3) expression is also significantly decreased by methyl gallate[3].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: [1]**KB cells**, a human mouth epithelial cell line, are treated with **Methyl gallate (1-8 mg/mL)** for 24 h. Cytotoxicity of Methyl gallate is assessed by a modified MTT assay[1].

References:

[1]. Kang MS, et al. Inhibitory effect of methyl gallate and gallic acid on oral bacteria. J Microbiol. 2008 Dec;46(6):744-50.

[2]. Hsieh TJ, et al. Protective effect of methyl gallate from Toona sinensis (Meliaceae) against hydrogen peroxide-induced oxidative stress and DNA damage in MDCK cells. Food Chem Toxicol. 2004 May;42(5):843-50.

[3]. Lee H, et al. Methyl gallate exhibits potent antitumor activities by inhibiting tumor infiltration of CD4+CD25+ regulatory T cells. J Immunol. 2010 Dec 1;185(11):6698-705.

[4]. Wang CR, et al. First report on isolation of methyl gallate with antioxidant, anti-HIV-1 and HIV-1 enzyme inhibitory activities from a mushroom (Pholiota adiposa). Environ Toxicol Pharmacol. 2014 Mar;37(2):626-37.

CAIndexNames:

Benzoic acid, 3,4,5-trihydroxy-, methyl ester

SMILES:

O=C(OC)C1=CC(O)=C(O)C(O)=C1

Caution: Product has not been fully validated for medical applications. For research use only.

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