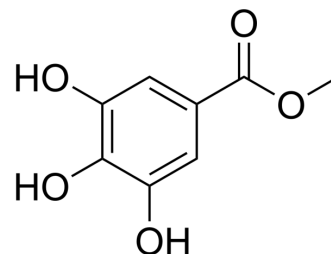


Methyl gallate

Cat. No.:	HY-N2010		
CAS No.:	99-24-1		
Molecular Formula:	C ₈ H ₈ O ₅		
Molecular Weight:	184.15		
Target:	Bacterial; Reactive Oxygen Species; HIV		
Pathway:	Anti-infection; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (543.04 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	5.4304 mL	27.1518 mL	54.3036 mL
		5 mM	1.0861 mL	5.4304 mL	10.8607 mL
10 mM		0.5430 mL	2.7152 mL	5.4304 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (13.58 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (13.58 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (13.58 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	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	HIV-1
In Vitro	The growth of <i>A. viscosus</i> is inhibited completely by a low dose of Methyl gallate (MIC=1 mg/mL). <i>S. mutans</i> and <i>S. sobrinus</i> show intermediate sensitivity to Methyl gallate (MIC=2-4 mg/mL), whereas the growth of <i>Lactobacillus</i> 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 H₂O₂ treatment. In addition, Methyl gallate-treated cells could prevent intracellular glutathione (GSH) from being depleted following an exposure of H₂O₂ (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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Int Immunopharmacol. 2022 Nov 29;114:109489.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA