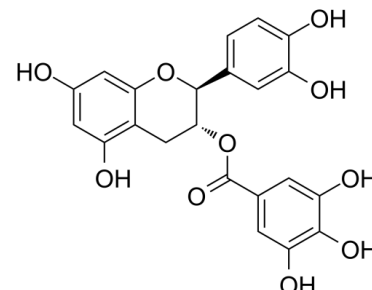


Data Sheet

Product Name:	(-)-Catechin gallate
Cat. No.:	CS-3758
CAS No.:	130405-40-2
Molecular Formula:	C ₂₂ H ₁₈ O ₁₀
Molecular Weight:	442.37
Target:	COX
Pathway:	Immunology/Inflammation
Solubility:	DMSO : 100 mg/mL (226.06 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

(-)-Catechin gallate is a minor constituent in green tea catechins. (-)-Catechin gallate inhibits the activity of **COX-1** and **COX-2** enzymes. IC₅₀ & Target: COX-1 and COX-2^[1] **In Vitro:** (-)-Catechin gallate (CG) directly interacts with DNA oligomers and inhibits the activity of COX-1 and COX-2 enzymes, the gene expression of matrix metalloproteinase-9 in macrophage-differentiated HL-60 myeloid leukemia cells, the adipocyte uptake of glucose by the transporter, GLUT4, and the activities of various proteasomes, i.e., the multicatalytic proteases responsible for the degradation of most cellular proteins. The relative cytotoxicities of a 3-day exposure to (-)-Catechin gallate are determined for cancerous CAL27 and HSG cells, immortalized epithelioid S-G cells, and normal HGF-1 gingival fibroblasts. The concentration at which toxicity (P≤0.01) initially occur is 25 μM (-)-Catechin gallate for S-G cells, 50 μM (-)-Catechin gallate for CAL27 cells, 62.5 μM (-)-Catechin gallate for HSG cells and 75 μM (-)-Catechin gallate for HGF-1 fibroblasts. The calculated neutral red (NR₅₀) values for a 3-day exposure to (-)-Catechin gallate are 58 μM for S-G cells, 62 μM for CAL27 cells, 90 μM for HSG cells and 132 μM for HGF-1 fibroblasts^[1].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: ^[1]Human tongue squamous carcinoma (CAL27) cells and human salivary gland carcinoma (HSG) cells are used. Individual wells of a 96-well microtiter tissue culture plate are inoculated with 0.2 mL of the growth medium containing 2×10⁴ cells/well for a 1-day exposure, 1.5×10⁴ cells/well for a 2-day exposure and 1×10⁴ cells/well for a 3-day exposure to the test agents. After 1 day of incubation, the growth medium is removed and replaced with exposure medium, with or without varied concentrations of the test agents. In some studies the cells are coexposed to (-)-Catechin gallate (100, 200, 300, 400, and 500 μM) and 100 Units/mL catalase. After 1-3 days of exposure to the test agents, viability is assessed with the neutral red (NR) assay, which is based on the uptake and accumulation of the supravital dye, neutral red (NR)^[1].

References:

[1]. Babich H, et al. In vitro cytotoxicity of (-)-catechin gallate, a minor polyphenol in green tea. Toxicol Lett. 2007 Jul 10;171(3):171-80.

CAIndexNames:

Benzoic acid, 3,4,5-trihydroxy-, (2S,3R)-2-(3,4-dihydroxyphenyl)-3,4-dihydro-5,7-dihydroxy-2H-1-benzopyran-3-yl ester

SMILES:

O=C(O[C@H]1[C@H](C2=CC=C(O)C(O)=C2)OC3=CC(O)=CC(O)=C3C1)C4=CC(O)=C(O)C(O)=C4

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

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