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PRODUCT INFORMATION

(-)-Catechin Gallate

Item No. 24963

CAS Registry No.: 130405-40-2
Formal Name: 3,4,5-trihydroxy-(2S,3R)-2-(3,4-dihydroxyphenyl)-3,4-dihydro-5,7-dihydroxy-2H-1-benzopyran-3-yl ester, benzoic acid

Synonym: (-)-CG
MF: C₂₂H₁₈O₁₀

FW: 442.4

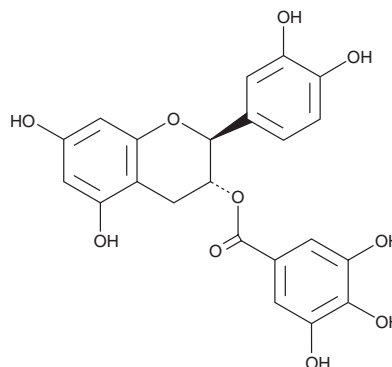
Purity: ≥98%

UV/Vis.: λ_{max}: 280 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥2 years



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

Laboratory Procedures

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

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (-)-CG can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (-)-CG in PBS, pH 7.2, is approximately 0.3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(-)-CG is a catechin polyphenol that has been found in green tea extracts with diverse biological activities.¹⁻⁴ It inhibits proliferation of MDA-MB-231 breast cancer cells and reduces VEGF-induced tyrosine phosphorylation of VEGF receptor 2 (VEGFR2) in bovine aortic endothelial cells (BAECs) in a concentration-dependent manner.^{1,2} (-)-CG is a competitive inhibitor of the facilitative glucose transporter GLUT4 (K_i = 90 μM) and inhibits methylglucose uptake by isolated rat adipocytes (IC₅₀ = 50 μM).³ It is also lytic against *T. cruzi* amastigotes, with a 50% bactericidal concentration (MBC₅₀) value of 48 pM.⁴

References

1. Lamy, S., Gingras, D., and Béliveau, R. Green tea catechins inhibit vascular endothelial growth factor receptor phosphorylation. *Cancer Res.* **62(2)**, 381-385 (2002).
2. Sartippour, M.R., Heber, D., Ma, J., et al. Green tea and its catechins inhibit breast cancer xenografts. *Nutr. Cancer* **40(2)**, 149-156 (2001).
3. Strobel, P., Allard, C., Perez-Acle, T., et al. Myricetin, quercetin and catechin-gallate inhibit glucose uptake in isolated rat adipocytes. *Biochem. J.* **386(Pt 3)**, 471-478 (2005).
4. Paveto, C., Güida, M.C., Esteva, M.I., et al. Anti-*Trypanosoma cruzi* activity of green tea (*Camellia sinensis*) catechins. *Antimicrob. Agents Chemother.* **48(1)**, 69-74 (2004).

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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