Small Molecules

(-)-Epigallocatechin Gallate

Antioxidant and epigenetic modifier;
Inhibits DNA methyltransferases (DNMTs)

Catalog # 73642
73644

50 mg
100 mg

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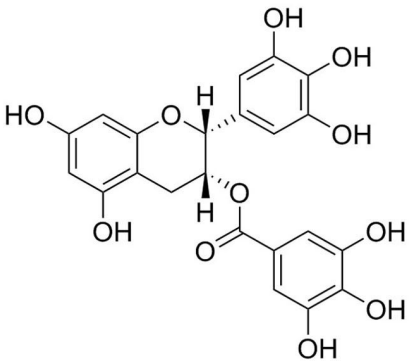
Product Description

(-)-Epigallocatechin Gallate is the most abundant polyphenol catechin antioxidant present in green tea (Frémont et al.; Johnson & Maddipati; Miller & Rice-Evans) and is known to inhibit DNA methyltransferases (DNMTs; IC_{50} = 0.21 - 0.47 µM; Lee et al.). (-)-Epigallocatechin Gallate also inhibits the formation of oxidized low-density lipoproteins (Yoshida et al.), which have a pathological role in cardiovascular diseases and atherosclerosis (Itabe et al.). (-)-Epigallocatechin Gallate has also been shown to inhibit peroxynitrite-mediated formation of 8-oxodeoxyguanosine and 3-nitrotyrosine (Fiala et al.).

Molecular Name:	(-)-Epigallocatechin Gallate
Alternative Names:	EGCG; NVP-XAA723; Tea catechin
CAS Number:	989-51-5
Chemical Formula:	$C_{22}H_{18}O_{11}$
Molecular Weight:	458.4 g/mol
Purity:	≥ 98%
Chemical Name:	3,4-dihydro-5,7-dihydroxy-2R-(3,4,5-trihydroxyphenyl)-2H-1-benzopyran-3R-yl-3,4,5-trihydroxy-benzoate
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	· PBS (pH 7.2) ≤ 50 mM · DMSO ≤ 50 mM · Ethanol ≤ 40 mM For example, to prepare a 10 mM stock solution in PBS, resuspend 10 mg in 2.18 mL of PBS. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

DIFFERENTIATION
· Inhibits bone resorption by inducing cell death of osteoclast-like multinucleated cells but not osteoblastic cells (Nakagawa et al.).
CANCER RESEARCH
· Inhibits growth and induces apoptosis in human pancreatic cancer cells in a mouse xenograft model (Du et al.; Shankar et al.).
· Causes cell cycle deregulation and apoptosis in human epidermoid cancer cell line, possibly via inhibition of NF-κB (Ahmad et al.).

References

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