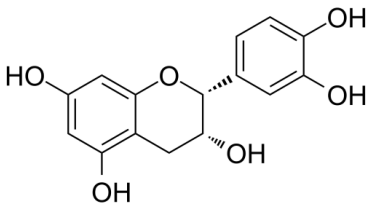
Data Sheet

Product Name:	(-)-Epicatechin
Cat. No.:	CS-3760
CAS No.:	490-46-0
Molecular Formula:	C15H14O6
Molecular Weight:	290.27
Target:	COX; Ferroptosis
Pathway:	Apoptosis; Immunology/Inflammation
Solubility:	DMSO : ≥ 34 mg/mL (117.13 mM)



BIOLOGICAL ACTIVITY:

(-)-Epicatechin inhibits cyclooxygenase-1 (**COX-1**) with an **IC_{50}** of 3.2 μM. (-)-Epicatechin inhibits the IL-1β-induced expression of iNOS by blocking the nuclear localization of the p65 subunit of NF-κB. IC50 & Target: IC50: 3.2 μM (COX-1)[1] **In Vitro:** (-)-Epicatechin exhibits >95% inhibitory activity at 70 μg/mL against cyclooxygenase-1 (COX-1) with an IC_{50} of 3.2 μM[1]. (-)-Epicatechin inhibits the IL-1β-induced expression of iNOS by blocking the nuclear localization of the p65 subunit of NF-κB. In RINm5F cells, (-)-Epicatechin is shown to block the inhibition of insulin release after addition of IL-1β. Additionally, (-)-Epicatechin is shown to inhibit the proliferation of Hodgkin's lymphoma cells and Jurkat T cells, which is attributed to the ability of (-)-Epicatechin to inhibit the binding of NF-κB to DNA in these cells. In human colorectal cancer HCT-116 cells, combining 20 μM Panaxadiol with 150, 200, or 250 μM (-)-Epicatechin results in growth inhibition of 51%, 97%, and 95%, respectively. The combination also increases the apoptosis level by 11.9%, 16.6%, and 25.8%, as examined by annexin V/PI staining[2]. **In Vivo:** Animals receive 1 mg/kg of (-)-Epicatechin or water (vehicle) via oral gavage (twice daily). Exercise groups undergo 15 days of treadmill exercise. Significant increases in treadmill performance (~50%) and enhanced in situ muscle fatigue resistance (~30%) are observed with (-)-Epicatechin[3].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: [3]Mice[3]

1-year-old, male C57BL/6N mice (n=25) are randomized into four groups. Mice in the **(-)-Epicatechin groups 3 and 4 are given 1.0 mg/kg twice a day (morning and evening) for 15 consecutive days**, whereas animals in the control groups 1 and 2 receive the vehicle (water). Both (-)-Epicatechin and vehicle are administered via oral gavage[3].

References:

[1]. Waffo-Téguo P, et al. Potential cancer-chemopreventive activities of wine stilbenoids and flavans extracted from grape (Vitis vinifera) cell cultures. Nutr Cancer. 2001;40(2):173-9.

[2]. Shay J, et al. Molecular Mechanisms and Therapeutic Effects of (-)-Epicatechin and Other Polyphenols in Cancer, Inflammation, Diabetes, and Neurodegeneration. Oxid Med Cell Longev. 2015;2015:181260.

[3]. Nogueira L, et al. (-)-Epicatechin enhances fatigue resistance and oxidative capacity in mouse muscle. J Physiol. 2011 Sep 15;589(Pt 18):4615-31.

CAIndexNames:

2H-1-Benzopyran-3,5,7-triol, 2-(3,4-dihydroxyphenyl)-3,4-dihydro-, (2R,3R)-

SMILES:

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

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

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