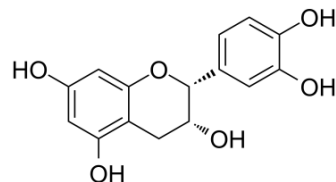


(-)-Epicatechin

Cat. No.:	HY-N0001		
CAS No.:	490-46-0		
Molecular Formula:	C ₁₅ H ₁₄ O ₆		
Molecular Weight:	290.27		
Target:	COX; Ferroptosis; Endogenous Metabolite		
Pathway:	Immunology/Inflammation; Apoptosis; Metabolic Enzyme/Protease		
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 (344.51 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	3.4451 mL	17.2253 mL	34.4507 mL
		5 mM	0.6890 mL	3.4451 mL	6.8901 mL
10 mM		0.3445 mL	1.7225 mL	3.4451 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 (8.61 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (8.61 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (8.61 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	(-)-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	COX-1 3.2 μM (IC ₅₀)	Human Endogenous Metabolite
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-1 β -induced expression of iNOS by blocking the nuclear localization of the p65 subunit of NF- κ B. In RINm5F cells, (-)-Epicatechin is shown to block the inhibition of insulin release after addition of IL-1 β . 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- κ B to DNA in these cells. In human colorectal cancer HCT-116 cells, combining 20 μ M Panaxadiol with 150, 200, or 250 μ M (-)-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].

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

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].

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

PROTOCOL

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].

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

CUSTOMER VALIDATION

- Viruses. 2020 Feb 4;12(2):176.
- Int J Insect Sci. 2018 Feb 28;10:1179543318758409.

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REFERENCES

[1]. Waffo-Tégou 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.

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

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