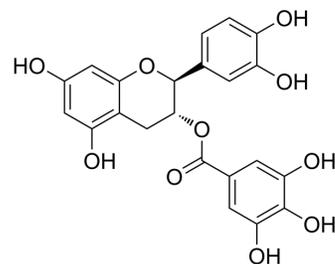


## (-)-Catechin gallate

<b>Cat. No.:</b>	HY-N0356		
<b>CAS No.:</b>	130405-40-2		
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>18</sub> O <sub>10</sub>		
<b>Molecular Weight:</b>	442.37		
<b>Target:</b>	COX		
<b>Pathway:</b>	Immunology/Inflammation		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (226.06 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	2.2606 mL	11.3028 mL	22.6055 mL
		5 mM	0.4521 mL	2.2606 mL	4.5211 mL
10 mM		0.2261 mL	1.1303 mL	2.2606 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.5 mg/mL (5.65 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (5.65 mM); Clear solution</li> </ol>				

### BIOLOGICAL ACTIVITY

<b>Description</b>	(-)-Catechin gallate is a minor constituent in green tea catechins. (-)-Catechin gallate inhibits the activity of COX-1 and COX-2 enzymes.	
<b>IC<sub>50</sub> &amp; Target</b>	COX-1	COX-2
<b>In Vitro</b>	(-)-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 ( $P \leq 0.01$ ) initially occur is 25  $\mu\text{M}$  (-)-Catechin gallate for S-G cells, 50  $\mu\text{M}$  (-)-Catechin gallate for CAL27 cells, 62.5  $\mu\text{M}$  (-)-Catechin gallate for HSG cells and 75  $\mu\text{M}$  (-)-Catechin gallate for HGF-1 fibroblasts. The calculated neutral red ( $\text{NR}_{50}$ ) values for a 3-day exposure to (-)-Catechin gallate are 58  $\mu\text{M}$  for S-G cells, 62  $\mu\text{M}$  for CAL27 cells, 90  $\mu\text{M}$  for HSG cells and 132  $\mu\text{M}$  for HGF-1 fibroblasts<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## PROTOCOL

### Cell Assay <sup>[1]</sup>

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  $2 \times 10^4$  cells/well for a 1-day exposure,  $1.5 \times 10^4$  cells/well for a 2-day exposure and  $1 \times 10^4$  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  $\mu\text{M}$ ) 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)<sup>[1]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Acta Pharm Sin B. 2021 Jan;11(1):143-155.

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## 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.

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

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