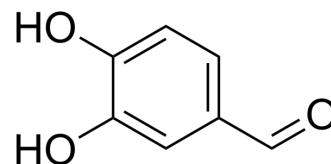


Protocatechualdehyde

Cat. No.:	HY-N0295
CAS No.:	139-85-5
Molecular Formula:	C ₇ H ₆ O ₃
Molecular Weight:	138.12
Target:	Reactive Oxygen Species; Bacterial; Endogenous Metabolite
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Anti-infection
Storage:	4°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	DMSO : ≥ 50 mg/mL (362.00 mM) * "≥" means soluble, but saturation unknown.																							
	<table border="1"> <thead> <tr> <th rowspan="2">Preparing Stock Solutions</th> <th rowspan="2">Solvent Concentration</th> <th colspan="3">Mass</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td></td> <td>1 mM</td> <td>7.2401 mL</td> <td>36.2004 mL</td> <td>72.4008 mL</td> </tr> <tr> <td></td> <td>5 mM</td> <td>1.4480 mL</td> <td>7.2401 mL</td> <td>14.4802 mL</td> </tr> <tr> <td></td> <td>10 mM</td> <td>0.7240 mL</td> <td>3.6200 mL</td> <td>7.2401 mL</td> </tr> </tbody> </table>	Preparing Stock Solutions	Solvent Concentration	Mass			1 mg	5 mg	10 mg		1 mM	7.2401 mL	36.2004 mL	72.4008 mL		5 mM	1.4480 mL	7.2401 mL	14.4802 mL		10 mM	0.7240 mL	3.6200 mL	7.2401 mL
	Preparing Stock Solutions			Solvent Concentration	Mass																			
		1 mg	5 mg		10 mg																			
		1 mM	7.2401 mL	36.2004 mL	72.4008 mL																			
	5 mM	1.4480 mL	7.2401 mL	14.4802 mL																				
	10 mM	0.7240 mL	3.6200 mL	7.2401 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 (18.10 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (18.10 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (18.10 mM); Clear solution 																							

BIOLOGICAL ACTIVITY

Description	Protocatechualdehyde (Catechaldehyde), a natural polyphenol compound isolated from the roots of radix Salviae Miltiorrhizae, is associated with a wide variety of biological activities and has been widely used in medicine as an antioxidant, anti-aging, an antibacterial and anti-inflammatory agent ^[1] .
In Vitro	Protocatechualdehyde (PCA) (50, 100 μM, 24/48 hours) treated MCF-7 cells significantly decrease cell growth by 11% and 20% in 24 hours and by 22% and 27% in 48 hours, respectively ^[2] . Protocatechualdehyde (50, 100 μM, 24 hours) treated MCF-7 cells are increased by 1.9-fold and 2.6-fold in the concentrations of 50 μM and 100 μM, respectively. PCA suppresses proliferation of estrogen receptor (ER)-positive (MCF-7) breast cancer

cells, but not ER-negative (MDA-MB-231) breast cancer cells^[2].

Protocatechualdehyde (0, 100, 200 μ M, 48 hours in HCT116 and SW480 cells) affects the enzyme activity of HDAC and observed that PCA treatment resulted in inhibition of HDAC activity in dose-dependent manner^[3].

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

Cell Proliferation Assay^[2]

Cell Line:	Human breast cancer cell (MCF-7 and MDA-MB-231)
------------	---

Concentration:	0, 5, 10, 25, 50, and 100 μ M
----------------	-----------------------------------

Incubation Time:	24, 48 hours
------------------	--------------

Result:	Inhibited MCF-7 cells cell growth.
---------	------------------------------------

Apoptosis Analysis^[2]

Cell Line:	Human breast cancer cell (MCF-7 and MDA-MB-231)
------------	---

Concentration:	0, 5, 10, 25, 50, and 100 μ M
----------------	-----------------------------------

Incubation Time:	24, 48 hours
------------------	--------------

Result:	Increased apoptosis in MCF-7 cells.
---------	-------------------------------------

REFERENCES

[1]. Li S, et al. Evaluation of the Antibacterial Effects and Mechanism of Action of Protocatechualdehyde against *Ralstonia solanacearum*. *Molecules*. 2016 Jun 9;21(6).

[2]. Choi J, et al. Anticancer activity of protocatechualdehyde in human breast cancer cells. *J Med Food*. 2014 Aug;17(8):842-8.

[3]. Jeong JB, et al. Protocatechualdehyde possesses anti-cancer activity through downregulating cyclin D1 and HDAC2 in human colorectal cancer cells. *Biochem Biophys Res Commun*. 2013 Jan 4;430(1):381-6.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA