Pyrogallol

Cat. No.: HY-N1579

CAS No.: 87-66-1

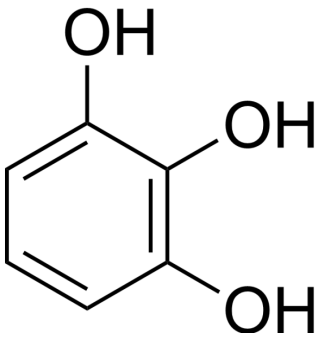
Molecular Formula: $C_6H_6O_3$

Molecular Weight: 126.11

Target: Endogenous Metabolite; Fungal; Apoptosis

Pathway: Metabolic Enzyme/Protease; Anti-infection; Apoptosis

Storage: 4°C, stored under nitrogen
* In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (792.96 mM)
H_2O : 50 mg/mL (396.48 mM; Need ultrasonic)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	7.9296 mL	39.6479 mL	79.2959 mL
	5 mM	1.5859 mL	7.9296 mL	15.8592 mL
	10 mM	0.7930 mL	3.9648 mL	7.9296 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 130 mg/mL (1030.85 mM); Clear solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (19.82 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Pyrogallol is a polyphenol compound, which has anti-fungal and anti-psoriatic properties. Pyrogallol is a reductant that is able to generate free radicals, in particular superoxide anions.

IC_{50} & Target		
	Microbial Metabolite	Microbial Metabolite

In Vitro	Pyrogallol (PG) is a reductant that is able to generate free radicals, in particular superoxide anions ($O_2^{\bullet-}$), so has frequently been used as a photographic developing agent and in the hair dying industry. Pyrogallol inhibits Calu-6 and A549 lung cancer cell growth via apoptosis and depletion of glutathione (GSH). Pyrogallol (PG) induces apoptosis in lung cancer cells via the overproduction of $O_2^{\bullet-}$ and affects mitogen activated protein kinases (MAPKs) in these cells[1]. The effect of Pyrogallol on human pulmonary fibroblast (HPF) cell viability and necrotic cell death is examined. For these experiments, 0, 50 or 100 μM Pyrogallol is used to differentiate the levels of cell viability inhibition or death with or without a given MAPK inhibitor. Treatment with 50 and 100 μM Pyrogallol decreases HPF viability by ~40 and 65% at 24 h, respectively. Treatment with an MEK inhibitor slightly enhances the inhibition of cell viability in 50 μM Pyrogallol-treated HPF cells, whereas treatment with a p38 inhibitor mildly attenuates the inhibition of viability. In 100 μM Pyrogallol-treated HPF cells, all the MAPK inhibitors increase the inhibition of viability to a certain extent, with treatment with the p38 inhibitor alone augmenting HPF control cell viability. Necrotic cell death is determined by measuring lactate dehydrogenase (LDH) release from cells. While treatment with 50 μM Pyrogallol does not affect LDH release from HPF cells, 100 μM Pyrogallol significantly increases LDH release[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Briefly, 5×10^3 HPF cells per well in 96-well microtiter plates are exposed to 0, 50 or 100 μM Pyrogallol with or without each MAPK inhibitor at 37°C for 24 h. Changes in cell viability induced by Pyrogallol and/or a given MAPK inhibitor are determined by measuring the MTT; dye absorbance[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Free Radic Biol Med. 2022 Aug 23;S0891-5849(22)00558-5.
- Plants. 2023 Aug 24, 12(17), 3044.

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REFERENCES

[1]. Han BR, et al. MAPK inhibitors enhance cell death in pyrogallol-treated human pulmonary fibroblast cells via increasing $O_2^{\bullet-}$ levels. Oncol Lett. 2017 Jul;14(1):1179-1185.

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