# Ethyl gallate

**Cat. No.:** HY-N0525

**CAS No.:** 831-61-8

**Molecular Formula:** $C_9H_{10}O_5$

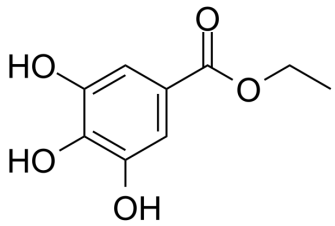
**Molecular Weight:** 198.17

**Target:** Bacterial

**Pathway:** Anti-infection

**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 (504.62 mM)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 5.0462 mL | 25.2309 mL | 50.4617 mL |
| 5 mM | 1.0092 mL | 5.0462 mL | 10.0923 mL |
| 10 mM | 0.5046 mL | 2.5231 mL | 5.0462 mL |

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

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (12.62 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (12.62 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (12.62 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Ethyl gallate is a nonflavonoid phenolic compound and also a scavenger of hydrogen peroxide.

**In Vitro**

Ethyl gallate is a nonflavonoid phenolic compound and also a scavenger of hydrogen peroxide. After treatment for 24 h or 48 h with Ethyl gallate, HL-60 cells show changes in morphology, including shrinkage of the cell membrane and the development of apoptotic bodies. Consistent with these effects, the viability of Ethyl gallate-treated cells decreases in a time- and dose-dependent manner, demonstrating that Ethyl gallate has a cytotoxic effect on HL-60 cells. Ethyl gallate treatment increases the proportion of cells in subG1 phase in a concentration- and time-dependent manner. Treatment of

| | |
|---|---|
| | cells for 24 h or 48 h with 50 μM or 75 μM Ethyl gallate increases the percentage of cells in the subG1 phase from a baseline of 2.9% to 26.5% or 52.6%, respectively. It is found that Ethyl gallate treatment of HL-60 cells decreases the expression of Bcl-2 at 75 μM Ethyl gallate, and increases Bax and truncated Bid (tBid) expression at 24 h[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **In Vivo** | No significant difference in the serum total protein, albumin, globulin and glucose is found between the rats fed with A. nilotica (L.) leaf extract on ethyl gallate equivalent basis and those fed with Ethyl gallate alone. Significant differences in total bilirubin level, however, exist between the rats that receive A. nilotica (L.) leaf extract, 500 mg/kg body weight (ethyl gallate equivalent of 10 mg/kg, 0.34±0.01 mg/dL) and those receiving 10 mg/kg body weight of Ethyl gallate (0.26±0.01 mg/dL). Significant difference is found for ALT between groups fed with 500 and 1000 mg/kg body weight of A. nilotica (L.) leaf extract (26.52±1.23 and 30.05±1.38 U/L) and 10 and 20 mg/kg of Ethyl gallate (20.50±0.94 and 24.67±1.13 U/L)[2].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## PROTOCOL

| | |
|---|---|
| **Kinase Assay** [1] | The expression of apoptosis-related proteins (caspases-8, -9, -3; AIF; Endo G; Bid; Bax; and Bcl-2) in HL-60 cells is determined by sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) of lysates followed by western blotting. For this, HL-60 cells ($1.5\times10^6$) are treated with 50 μM or 75 μM Ethyl gallate for 6 h, 12 h, or 24 h. Total cell lysates are obtained by resuspending cells in ice-cold radioimmunoprecipitation assay (RIPA) buffer for 30 min followed by centrifugation. Protein concentration is determined using a NanoDrop spectrophotometer. Aliquots of lysates (100 μg protein equivalents) are resolved by 12% SDS-PAGE and transferred onto nitrocellulose membranes[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Cell Assay** [1] | HL-60 cells ($1\times10^6$) are treated with 50 μM or 75 μM Ethyl gallate for 24 h or 48 h at 37°C. Cells are then harvested by centrifugation and fixed in 70% ethanol at 4°C for 24 h. Fixed cells are resuspended in PBS containing 40 μg/mL Propidium iodide (PI), 100 μg/mL RNase A, and 0.1% Triton X-100 and incubated in the dark for 30 min at room temperature. Cell cycle distribution is analyzed by flow cytometry on a FACSCalibur. To investigate apoptotic cells, HL-60 cells ($1\times10^6$) incubated with different concentration of 50 μM, 75 μM and 100 μM Ethyl gallate for 24 h or 48 h at 37°C, and then DAPI staining is conducted. The cells are photographed using a fluorescence microscopy[1].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |
| **Animal Administration** [2] | Forty eight female albino Wistar rats of six to eight weeks old are used and divided into eight groups based on their body weights. Group 1 rats serve as control receiving 1.0 mL of the vehicle (0.1% ethanol); Group 2 rats receive A. nilotica (L.) leaf extract (250 mg/kg body weight); Group 3 rats receive A. nilotica (L.) leaf extract (500 mg/kg body weight); Group 4 rats receive A. nilotica (L.) leaf extract (1000 mg/kg body weight); Group 5 rats receive A. nilotica (L.) leaf extract (2000 mg/kg body weight); Group 6 rats receive Ethyl gallate (5 mg/kg body weight); Group 7 rats receive Ethyl gallate (10 mg/kg body weight); Group 8 rats receive Ethyl gallate (20 mg/kg body weight). Body weights are recorded on $0^{th}$ and $14^{th}$ day for each group and all rats are decapitated after an overnight fast[2].<br>MCE has not independently confirmed the accuracy of these methods. They are for reference only. |

## CUSTOMER VALIDATION

- Biochem Biophys Res Commun. 2021 Apr 8;556:65-71.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. Kim WH, et al. Ethyl gallate induces apoptosis of HL-60 cells by promoting the expression of caspases-8, -9, -3, apoptosis-inducing factor and endonuclease G. Int J Mol Sci. 2012;13(9):11912-22.

[2]. Mohan S, et al. In vitro protection of biological macromolecules against oxidative stress and in vivo toxicity evaluation of Acacia nilotica (L.) and ethyl gallate in rats. BMC Complement Altern Med. 2014 Jul 21;14:257.



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