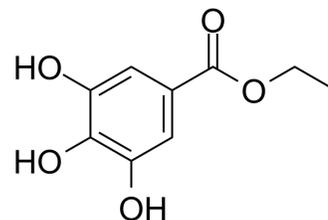


## Ethyl gallate

|                           |   |       |          |
|---------------------------|---|-------|----------|
| <b>Cat. No.:</b>          | HY-N0525                                      |       |          |
| <b>CAS No.:</b>           | 831-61-8                                      |       |          |
| <b>Molecular Formula:</b> | C <sub>9</sub> H <sub>10</sub> O <sub>5</sub> |       |          |
| <b>Molecular Weight:</b>  | 198.17  |       |          |
| <b>Target:</b>            | Bacterial                                     |       |          |
| <b>Pathway:</b>           | Anti-infection                                |       |          |
| <b>Storage:</b>           | 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.

|                              | Solvent<br>Concentration | Mass      |            |            |
|------------------------------|--------------------------|-----------|------------|------------|
|                              |                          | 1 mg      | 5 mg       | 10 mg      |
| Preparing<br>Stock Solutions | 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

- 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
- 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
- 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

|                |  |
|----------------|--|
|                | <p>cells for 24 h or 48 h with 50 <math>\mu</math>M or 75 <math>\mu</math>M 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 <math>\mu</math>M Ethyl gallate, and increases Bax and truncated Bid (tBid) expression at 24 h<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>   |
| <b>In Vivo</b> | <p>No significant difference in the serum total protein, albumin, globulin and glucose is found between the rats fed with <i>A. nilotica</i> (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 <i>A. nilotica</i> (L.) leaf extract, 500 mg/kg body weight (ethyl gallate equivalent of 10 mg/kg, 0.34<math>\pm</math>0.01 mg/dL) and those receiving 10 mg/kg body weight of Ethyl gallate (0.26<math>\pm</math>0.01 mg/dL). Significant difference is found for ALT between groups fed with 500 and 1000 mg/kg body weight of <i>A. nilotica</i> (L.) leaf extract (26.52<math>\pm</math>1.23 and 30.05<math>\pm</math>1.38 U/L) and 10 and 20 mg/kg of Ethyl gallate (20.50<math>\pm</math>0.94 and 24.67<math>\pm</math>1.13 U/L)<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> |

## PROTOCOL

|   |  |
|---|--|
| <b>Kinase Assay</b> <sup>[1]</sup>          | <p>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 (<math>1.5 \times 10^6</math>) are treated with 50 <math>\mu</math>M or 75 <math>\mu</math>M 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 <math>\mu</math>g protein equivalents) are resolved by 12% SDS-PAGE and transferred onto nitrocellulose membranes<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>   |
| <b>Cell Assay</b> <sup>[1]</sup>            | <p>HL-60 cells (<math>1 \times 10^6</math>) are treated with 50 <math>\mu</math>M or 75 <math>\mu</math>M 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 <math>\mu</math>g/mL Propidium iodide (PI), 100 <math>\mu</math>g/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 (<math>1 \times 10^6</math>) incubated with different concentration of 50 <math>\mu</math>M, 75 <math>\mu</math>M and 100 <math>\mu</math>M 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<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>                              |
| <b>Animal Administration</b> <sup>[2]</sup> | <p>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 <i>A. nilotica</i> (L.) leaf extract (250 mg/kg body weight); Group 3 rats receive <i>A. nilotica</i> (L.) leaf extract (500 mg/kg body weight); Group 4 rats receive <i>A. nilotica</i> (L.) leaf extract (1000 mg/kg body weight); Group 5 rats receive <i>A. nilotica</i> (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<sup>th</sup> and 14<sup>th</sup> day for each group and all rats are decapitated after an overnight fast<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> |

## CUSTOMER VALIDATION

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

See more customer validations on [www.MedChemExpress.com](http://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.

---

**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](mailto:tech@MedChemExpress.com)

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