

Gallic acid Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Gallic acid

Catalog No.: CFN99624

Cas No.: 149-91-7

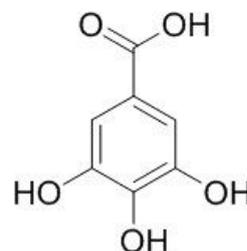
Purity: > 98%

M.F: C₇H₆O₅

M.W: 170.1

Physical Description: Powder

Synonyms: 3,4,5-Trihydroxybenzoic acid.



[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Cosmetic research;
5. Synthetic precursor compounds;
6. Intermediates & Fine Chemicals;
7. Care and daily chemicals;
8. Others.

[Source]

The seeds of *Vitis vinifera*

[Biological Activity or Inhibitors]

Gallic acid (GA) and curcumin are natural phenolic compounds, both have cytotoxic activity in relation to their radical modulating activity, induce apoptosis by different mechanisms, and gallic acid produces higher amounts of radicals and more efficiently scavenged the superoxide anion radical.^[1]

Gallic acid has antioxidant activities at a higher concentration is mainly due to the scavenging of hydrogen peroxide in this system, and the pro-oxidant mechanism is most likely due to the strong reducing power and weak metalchelating ability.^[2]

Gallic acid has a strong anti-tyrosinase activity ($IC_{50}=3.59 \times 10^{-6}$ M), effectively suppresses murine tyrosinase action and the amount of melanin, down-regulates the RS generation and enhanced the glutathione (GSH)/oxidized glutathione (GSSG) ratio, indicates that GA exerts antimelanogenic activity coupled with antioxidant properties by suppressing RS generation and maintaining a higher glutathione (GSH)/oxidized glutathione (GSSG) ratio.^[3]

Gallic acid, a histone acetyltransferase inhibitor, can efficiently block neuronal cell death by downregulating the expression of cytokines and the in vivo levels of NF- κ B acetylation, suggest that GA is a possible therapeutic approach for alleviating the inflammatory progression of Alzheimer disease.^[4]

Gallic acid is a potent inhibitor of brush border sucrase and other disaccharidases and thus could potentially interfere with the digestive functions of the intestine.^[5]

Gallic acid has anti-tumor activity, combination of gallic acid and cisplatin increased the tumor cell apoptosis compared with the treatment with cisplatin alone, suggests that the combination of gallic acid with an anti-cancer drug, including cisplatin, may be an effective protocol for lung cancer therapy.^[6]

[Solvent]

Pyridine, DMSO, Methanol, Ethanol, Hot water, etc.

[HPLC Method]^[7]

Mobile phase: Methanol- 0.1% Acetic acid H₂O, gradient elution ;

Flow rate: 0.9 ml/min;

Column temperature: Room Temperature;

The wave length of determination: 278 nm.

[Storage]

2-8°C, Protected from air and light, refrigerate or freeze.

[References]

- [1] Nogaki A, Satoh K, Iwasaka K, *et al. Anticancer Res.*, 1998, 18(5A):3487-91.
- [2] Yen G C, Duh P D, Tsai H L. *Food Chem.*, 2002, 79(3):307-13.
- [3] Kim Y J. *Biol. Pharm. Bull.*, 2007, 30(6):1052-5.
- [4] Kim M J, Seong A R, Yoo J Y, *et al. Mol. Nutr. Food Res.*, 2011, 55(12):1798-808.
- [5] Gupta N, Gupta S, Mahmood A. *Nut. Res.*, 2007, 27(4):230-5.
- [6] Kawada M, Ohno Y, Ri Y, *et al. Anti-cancer Drugs*, 2001, 12(10):847-52.
- [7] Sawant L, Prabhakar B, Pandita N. *J. Anal. Bioanal. Techniques*, 2010, 1(1):1-4.

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