

Caffeic acid Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: Caffeic acid

Catalog No.: CFN99190

Cas No.: 331-39-5

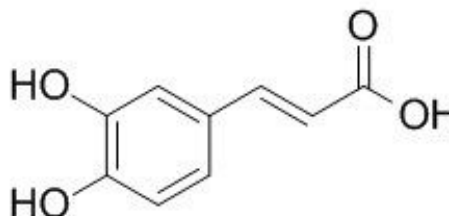
Purity: > 98%

M.F: C₉H₈O₄

M.W: 180.15

Physical Description: Yellow cryst.

Synonyms: 3,4-Dihydroxybenzeneacrylic acid;3-(3,4-Dihydroxyphenyl)-2-propenoic acid;
4-(2-Carboxyethenyl)-1,2-dihydroxybenzene.



[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food and cosmetic research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals;
6. Ingredient in supplements, beverages;
7. Aromatics;
8. Others.

[Source]

The herb of *Boehmeria siamensis Craib*.

[Biological Activity or Inhibitors]

Caffeic acid is a well-known phenolic phytochemical present in many foods, including coffee, has anticarcinogenic effects, it can suppress ultraviolet B(UVB)-induced COX-2 expression by blocking Fyn kinase activity, suggests that this compound could act as a potent chemopreventive agent against skin cancer.^[1]

Caffeic acid has antioxidant activity, is an effective 2-azino-bis(3-ethylbenzthiazoline-6-sulfonic acid) (ABTS) radical scavenging, 1,1-diphenyl-2-picryl-hydrazyl free radical (DPPH) scavenging, superoxide anion radical scavenging, total reducing power and metal chelating on ferrous ions activities.^[2]

Caffeic acid has a stronger antioxidant activity than that of chlorogenic acid and chlorogenic acid is hydrolyzed into caffeic acid in the intestine, it is possible that caffeic acid plays a major role in the protective effect of chlorogenic acid against ischemia–reperfusion injury.^[3]

Caffeic acid inhibits HBV-DNA replication as well as HBsAg production, also reduces serum DHBV level in DHBV-infected duckling model, suggests it has anti-HBV activity .^[4]

Caffeic acid and some of its derivatives such as caffeic acid phenetyl ester (CAPE) and octyl caffeate are potent antioxidants which present important anti-inflammatory actions, being their actions mediated, at least in part by the scavenging of NO and their ability to modulate iNOS expression and probably that of other inflammatory mediators.^[5]

Caffeic acid exhibits a significant potential as an antidiabetic agent by suppressing a progression of type 2 diabetic states that is suggested by an attenuation of hepatic glucose output and enhancement of adipocyte glucose uptake, insulin secretion, and antioxidant capacity.^[6]

[Solvent]

Chloroform, Dichloromethane, Pyridine, DMSO, Methanol.

[HPLC Method]^[7]

Mobile phase: Acetonitrile : 0.4% Phosphoric acid H₂O=12:88;

Flow rate: 1.0 ml/min;

Column temperature: 35 °C;

The wave length of determination: 328 nm.

[Storage]

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

[References]

- [1] Kang N J, Lee K W, Shin B J, *et al. Carcinogenesis*, 2009, 30(2):321-30.
- [2] İlhami Gülçin. *Toxicology*, 2006, 217(2-3):213-20.
- [3] Sato Y, Itagaki S, Kurokawa T, *et al. Int. J. Pharm.*, 2011, 403(1-2):136-8.
- [4] Wang G F, Shi L P, Ren Y D, *et al. Antiviral Res.*, 2009, 83(2):186-90.
- [5] Da C F, Duma D, Assreuy J, *et al. Free Radical Res.*, 2009, 38(11):1241-53.
- [6] Jung U J, Lee M K, Park Y B, *et al. J. Pharmacol. Exp. Ther.*, 2006, 318(2):476-83.
- [7] Yong Y, Fang B H, Liu G C, *et al. Chinese Journal of Veterinary Drug*, 2014, 48(09): 30-3.

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