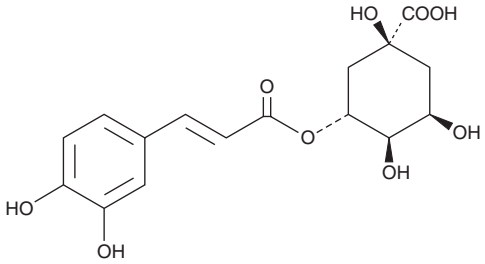
PRODUCT INFORMATION

Chlorogenic Acid

Item No. 70930

CAS Registry No.:	327-97-9
Formal Name:	3R-[[3-(3,4-dihydroxyphenyl)-1-oxo-2-propenyl]oxy]-1S,4R,5R-trihydroxy-cyclohexanecarboxylic acid
Synonyms:	3-O-Caffeoylquinic acid, Heriguard, NSC 407296
MF:	$C_{16}H_{18}O_9$
FW:	354.3
Purity:	≥95%
UV/Vis.:	λ_{max}: 219, 246, 331 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Chlorogenic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the chlorogenic acid in the solvent of choice, which should be purged with an inert gas. Chlorogenic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of chlorogenic acid in these solvents is approximately 25, 50, and 71 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of chlorogenic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of chlorogenic acid in PBS (pH 7.2) is approximately 25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Chlorogenic acid is a phenolic natural product isolated from the leaves and fruits of dicotyledonous plants, including the coffee bean. Structurally, chlorogenic acid is the ester of caffeic acid with the 3-hydroxyl group of quinic acid. Chlorogenic acid is an important factor in plant metabolism. It is also an antioxidant and an inhibitor of the tumor promoting activity of phorbol esters.[1,2] Chlorogenic acid, at concentrations as high as 100 µM, did not inhibit the 5-lipoxygenase activity of ionophore-stimulated human PMNLs.[3]

References

1. Huang, M.T., Smart, R.C., Wong, C., *et al.* Inhibitory effect of curcumin, chlorogenic acid, caffeic acid, and ferulic acid on tumor promotion in mouse skin by 12-O-tetradecanoylphorbol-13-acetate. *Cancer Res.* **48(21)**, 5941-5946 (1988).
2. Conney, A.H., Lysz, T., Ferraro, T., *et al.* Inhibitory effect of curcumin and some related dietary compounds on tumor promotion and arachidonic acid metabolism in mouse skin. *Adv. Enzyme Regul.* **31**, 385-396 (1991).
3. Kimura, Y., Okuda, H., Okuda, T., *et al.* Studies on the activities of tannins and related compounds, X. Effects of caffeetannins and related compounds on arachidonate metabolism in human polymorphonuclear leukocytes. *J. Nat. Prod.* **50(3)**, 392-399 (1987).

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