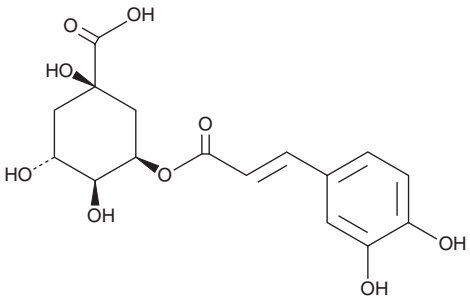
PRODUCT INFORMATION

5-O-Caffeoylquinic Acid

Item No. 25054

CAS Registry No.:	906-33-2
Formal Name:	(1R,3R,4S,5R)-3-[[(2E)-3-(3,4-dihydroxyphenyl)-1-oxo-2-propen-1-yl]oxy]-1,4,5-trihydroxy-cyclohexanecarboxylic acid
Synonyms:	5-Caffeoylquinic Acid, *trans*-5-O-Caffeoylquinic Acid, 5-CQA, Neochlorogenic Acid
MF:	$C_{16}H_{18}O_9$
FW:	354.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 218, 328 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/*Lonicera japonica*



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

Laboratory Procedures

5-O-Caffeoylquinic acid (5-CQA) is supplied as a crystalline solid. A stock solution may be made by dissolving the 5-CQA in the solvent of choice, which should be purged with an inert gas. 5-CQA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 5-CQA in ethanol and DMSO is approximately 50 mg/ml and approximately 71 mg/ml in DMF.

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 5-CQA can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 5-CQA in PBS (pH 7.2) is approximately 25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

5-CQA is a phenolic compound that has been found in *M. domestica* and has diverse biological activities, including antioxidant, anti-inflammatory, and antidiabetic properties.[1-4] 5-CQA scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805; EC_{50} = 0.184 mg/ml) and 2,2′-azobis(2-amidinopropane) dihydrochloride (AAPH; Item No. 82235) radicals in cell-free assays (IC_{50} = 0.124 mg/ml).[1] It decreases IL-6 and TNF-α levels in serum and macrophage infiltration into epididymal adipose tissue in rats fed a high-fat diet when administered at a dose of 90 mg/kg per day.[3] 5-CQA (90 mg/kg per day) also decreases serum and liver free fatty acid (FFA) levels and lowers blood glucose level in an oral glucose tolerance test in high-fat diet-fed rats.[4]

References

1. Hamauzu, Y., Yasui, H., Inno, T., *et al. J. Agric. Food Chem.* **53(4)**, 928-934 (2005).
2. Iwai, K., Kishimoto, N., Kakino, Y., *et al. J. Agric. Food Chem.* **52(15)**, 4893-4898 (2004).
3. Liu, S.L., Peng, B.J., Zhong, Y.L., *et al. Food Funct.* **6(8)**, 2779-2786 (2015).
4. Huang, K., Liang, X.C., Zhong, Y.L., *et al. J. Sci. Food Agric.* **95(9)**, 1903-1910 (2015).

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