

# PRODUCT INFORMATION



## 3,4-Dicaffeoylquinic Acid

Item No. 25053

CAS Registry No.: 14534-61-3

Formal Name: (1S,3R,4R,5R)-3,4-bis[[3-(3,4-dihydroxyphenyl)-1-oxo-2-propenyl]oxy]-1,5-dihydroxycyclohexanecarboxylic acid

Synonyms: 3,4-DCQA, Isochlorogenic Acid B

MF:  $C_{25}H_{24}O_{12}$

FW: 516.5

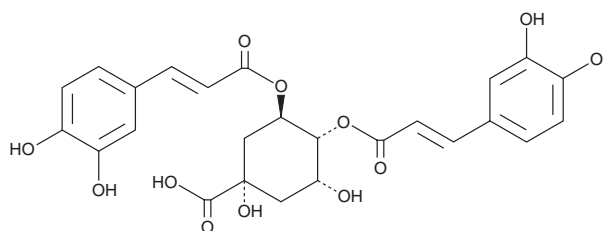
Purity:  $\geq 98\%$

UV/Vis.:  $\lambda_{max}$ : 218, 330 nm

Supplied as: A crystalline solid

Storage:  $-20^{\circ}\text{C}$

Stability:  $\geq 4$  years



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

### Laboratory Procedures

3,4-Dicaffeoylquinic acid (3,4-DCQA) is supplied as a crystalline solid. A stock solution may be made by dissolving the 3,4-DCQA in the solvent of choice, which should be purged with an inert gas. 3,4-DCQA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 3,4-DCQA is approximately 50 mg/ml in ethanol and DMSO 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 3,4-DCQA can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 3,4-DCQA in PBS (pH 7.2) is approximately 25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

3,4-DCQA is a polyphenol with diverse biological activities.<sup>1-4</sup> 3,4-DCQA (1-500  $\mu\text{g/ml}$ ) inhibits acetylcholinesterase (ACE) and  $\alpha$ -glucosidase in a concentration-dependent manner.<sup>1,3</sup> It reduces mutagenicity of Trp-P-1 against *S. typhimurium* by 59% when used at a concentration of 0.57 mM.<sup>2</sup> 3,4-DCQA has antioxidant activity in ferric reducing,  $\beta$ -carotene bleaching, and DPPH scavenging assays ( $\text{EC}_{50}\text{s}$  = 2.18, 23.85, and 68.91  $\mu\text{g/ml}$ , respectively).<sup>3</sup> It is cytotoxic to NCI-H23 lung adenocarcinoma cells ( $\text{EC}_{50}$  = 3.26  $\mu\text{g/ml}$ ). *In vivo*, 3,4-DCQA (50 mg/kg) increases tumor necrosis factor-related apoptosis inducing ligand (TRAIL) mRNA, reduces influenza H1N1 hemagglutinin (HA) mRNA, and increases survival in a mouse model of influenza A infection.<sup>4</sup>

### References

- Oh, H., Kang, D.-G., Lee, S., et al. *J. Ethnopharmacol.* **83**(1-2), 105-108 (2012).
- Yoshimoto, M., Yahara, S., Okuno, S., et al. *Biosci. Biotechnol. Biochem.* **66**(11), 2336-2341 (2002).
- Ooi, K.L., Muhammad, T.S.T., Tan, M.L., et al. *J. Ethnopharmacol.* **135**(3), 685-695 (2011).
- Takemura, T., Urushisaki, T., Fukuoka, M., et al. *Evid. Based Complement. Alternat. Med.* **2012**:946867, (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/07/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM