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## Produktinformation



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# PRODUCT INFORMATION



## 4,5-Dicaffeoylquinic Acid

Item No. 27892

CAS Registry No.: 57378-72-0

Formal Name: (1R,3R,4S,5R)-3,4-bis[[3-(3,4-dihydroxyphenyl)-1-oxo-2-propen-1-yl]oxy]-1,5-dihydroxy-cyclohexanecarboxylic acid  
4,5-DCQA, Isochlorogenic Acid C

Synonyms:

MF: C<sub>25</sub>H<sub>24</sub>O<sub>12</sub>

FW: 516.5

Purity: ≥98%

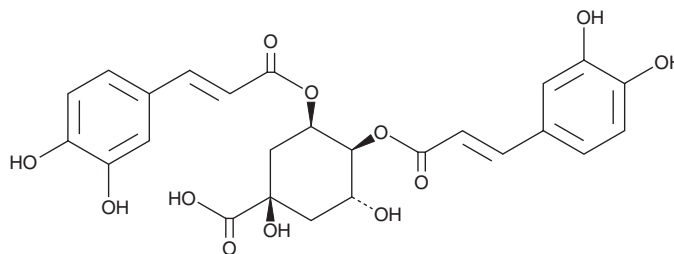
UV/Vis.: λ<sub>max</sub>: 219, 245, 331 nm

Supplied as: A solid

Storage: -20°C

Stability: ≥2 years

Item Origin: Plant/*Lonicera japonica* Thunb.



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

### Laboratory Procedures

4,5-Dicaffeoylquinic acid (4,5-DCQA) is supplied as a solid. A stock solution may be made by dissolving the 4,5-DCQA in the solvent of choice, which should be purged with an inert gas. 4,5-DCQA is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of 4,5-DCQA in these solvents is approximately 5 and 30 mg/ml, respectively.

4,5-DCQA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 4,5-DCQA should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 4,5-DCQA has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

4,5-DCQA is a polyphenol originally isolated from *G. fagetorum* and *G. pseudomollugo* that has diverse biological activities, including anti-HIV replication, antioxidative, anti-inflammatory, and anti-melanogenic properties.<sup>1-5</sup> It inhibits HIV-1 integrase 3' end processing, 3' end joining, and disintegration with IC<sub>50</sub> values of 0.13, 0.24, and 0.3 µg/ml, respectively.<sup>3</sup> It also inhibits HIV-1 replication in MT-2 T lymphoblastoid cells with an EC<sub>50</sub> value of 2 µg/ml. 4,5-DCQA scavenges 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805) radicals in a cell-free assay (IC<sub>50</sub> = 19.8 µM) and inhibits superoxide production in human neutrophils activated by N-formyl-Met-Leu-Phe (fMLF; Item No. 21495) and cytochalasin B (Item No. 11328; IC<sub>50</sub> = 1.49 µM).<sup>2</sup> It decreases prostaglandin E<sub>2</sub> (PGE<sub>2</sub>; Item No. 14010) production in LPS-stimulated U937 cells when used at concentrations of 5 and 10 µg/ml but increases it when used at 200 µg/ml and increases production of TNF-α at concentrations ranging from 5 to 200 µg/ml.<sup>4</sup> It inhibits the synthesis of MCP3 in U937 cells. 4,5-DCQA (25 µM) inhibits melanogenesis by 84% and decreases the levels of proteins involved in melanin biosynthesis, including tyrosinase, TRP-1, DCT, and MITF in B16F1 murine melanocytes.<sup>5</sup>

### References

1. Bogaevskii, A.K., Dranik, L.I., and Borisov, M.I. *Chem. Nat. Compd.* **6**(6), 761-762 (1970).
2. Chen, Y.-L., Hwang, T.-L., Yu, H.-P., et al. *Sci. Rep.* **6**, 34243 (2016).
3. Robinson, W.E., Jr., Cordeiro, M., Abdel-Malek, S., et al. *Mol. Pharmacol.* **50**(4), 846-855 (1996).
4. dos Santos, M.D., Chen, G., Almeida, M.C., et al. *Nat. Prod. Commun.* **5**(5), 733-740 (2010).
5. Ha, J.H. and Park, S.N. *Bioorg. Med. Chem.* **26**(14), 4201-4208 (2018).

#### 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.

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