

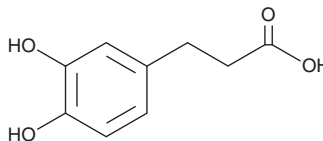
# PRODUCT INFORMATION



## Dihydrocaffeic Acid

Item No. 28390

**CAS Registry No.:** 1078-61-1  
**Formal Name:** 3,4-dihydroxy-benzenepropanoic acid  
**Synonym:** 3,4-Dihydroxyhydrocinnamic Acid  
**MF:** C<sub>9</sub>H<sub>10</sub>O<sub>4</sub>  
**FW:** 182.2  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 225, 284 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

Dihydrocaffeic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the dihydrocaffeic acid in the solvent of choice, which should be purged with an inert gas. Dihydrocaffeic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of dihydrocaffeic acid in ethanol is approximately 10 mg/ml and approximately 25 mg/ml in DMSO and 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 dihydrocaffeic acid can be prepared by directly dissolving the solid in aqueous buffers. The solubility of dihydrocaffeic acid in PBS, pH 7.2, is approximately 2.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Dihydrocaffeic acid is a polyphenol that has diverse biological activities, including antioxidant, neuroprotective, and enzyme inhibitory properties.<sup>1,2</sup> Dihydrocaffeic acid scavenges ABTS (Item No. 27317; IC<sub>50</sub> = 81.86 µg/ml) and 2,2-diphenyl-1-picrylhydrazyl (DPPH; Item No. 14805; IC<sub>50</sub> = 192.86 µg/ml) radicals and increases the survival of RGC-5 mouse retinal ganglion cells under hypoxic conditions and in the presence of S-nitroso-N-acetyl-D,L-penicillamine (SNAP; Item No. 82250) in a concentration-dependent manner.<sup>1</sup> It also decreases endothelial nitric oxide synthase (eNOS) activity in EA.hy926 human endothelial cells in a concentration-dependent manner.<sup>3</sup> *In vivo*, dihydrocaffeic acid (30 mg/kg) decreases infarct size in a rat model of transient ischemia induced by middle cerebral artery occlusion (MCAO).<sup>2</sup>

### References

1. Jang, H., Choi, Y., Ahn, H.R., *et al.* Effects of phenolic acid metabolites formed after chlorogenic acid consumption on retinal degeneration in vivo. *Mol. Nutr. Food. Res.* **59(10)**, 1918-1929 (2015).
2. Lee, K., Lee, B.J., and Bu, Y. Protective effects of dihydrocaffeic acid, a coffee component metabolite, on a focal cerebral ischemia rat model. *Molecules* **20(7)**, 11930-11940 (2015).
3. Huang, J., De Paulis, T., and May, J.M. Antioxidant effects of dihydrocaffeic acid in human EA.hy926 endothelial cells. *J. Nutr. Biochem.* **15(12)**, 722-729 (2004).

#### 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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