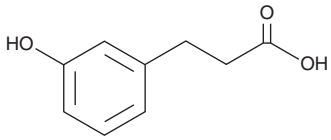
PRODUCT INFORMATION

3-(3-Hydroxyphenyl)propanoic Acid

Item No. 36268

CAS Registry No.:	621-54-5
Formal Name:	3-hydroxy-benzenepropanoic acid
Synonyms:	Dihydro-3-coumaric Acid, 3-Hydroxy-dihydro-3-coumaric Acid, 3-Hydroxyphenylpropanoate, *m*-Hydroxyphenylpropionic Acid, NSC 33135, NSC 39468
MF:	$C_9H_{10}O_3$
FW:	166.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 217, 276 nm
Supplied as:	A 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

3-(3-Hydroxyphenyl)propanoic acid is supplied as a solid. A stock solution may be made by dissolving the 3-(3-hydroxyphenyl)propanoic acid in the solvent of choice, which should be purged with an inert gas. 3-(3-Hydroxyphenyl)propanoic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 3-(3-hydroxyphenyl)propanoic acid in ethanol is approximately 2 mg/ml and approximately 1 mg/ml in DMSO. 3-(3-Hydroxyphenyl)propanoic acid is slightly soluble 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-(3-hydroxyphenyl)propanoic acid can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 3-(3-hydroxyphenyl)propanoic acid in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

3-(3-Hydroxyphenyl)propanoic acid is an active metabolite of various polyphenols, including dihydrocaffeic acid (Item No. 28390) and chlorogenic acid (Item No. 70930).[1,2] It is formed from these polyphenols by gut microbiota.[1,3] It reduces bone resorption activity and the number of RANKL-differentiated RAW 264.7 osteoclasts in a hydroxyapatite model of resorption when used at a concentration of 0.1 mg/ml.[4] 3-(3-Hydroxyphenyl)propanoic acid inhibits amyloid-β (1-42) (Aβ42) peptide aggregation in a cell-free assay when used at a concentration of 100 µM and accumulates in the brain of rats fed grape seed polyphenol extract.[3] It also reduces hemolysis, restores disruptions to membrane integrity, and reverses increases in malondialdehyde (MDA) activity and decreases in catalase (CAT) and superoxide dismutase (SOD) activities induced by cadmium in isolated rat erythrocytes when used at a concentration of 500 nM and in rat erythrocytes *ex vivo* after administration of an 80 mg/kg dose.[2] It also prevents increases in intracellular cadmium levels in these in the same cells *in vitro* and *in vivo*.

References

1. Peppercorn, M.A. and Goldman, P. *J. Bacteriol.* **108(3)**, 996-1000 (1971).
2. Cheng, D., Song, Q., Ding, Y., *et al. J. Agric. Food Chem.* **69(13)**, 3859-3870 (2021).
3. Wang, D., Ho, L., Faith, J., *et al. Mol. Nutr. Food Res.* **59(6)**, 1025-1040 (2015).
4. Zhao, H., Lazarenko, O.P., and Chen, J.-R. *J. Cell. Physiol.* **235(1)**, 599-610 (2020).

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