

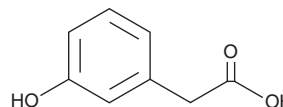
PRODUCT INFORMATION



3-Hydroxyphenylacetic Acid

Item No. 36436

CAS Registry No.: 621-37-4
Formal Name: 3-hydroxy-benzeneacetic acid
Synonyms: 3-HPAA, *m*-HPAA, *meta*-HPAA, *m*-Hydroxyphenylacetic Acid, *meta*-Hydroxyphenylacetic Acid, NSC 14360
MF: C₈H₈O₃
FW: 152.1
Purity: ≥98%
UV/Vis.: λ_{max}: 217 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-Hydroxyphenylacetic acid is supplied as a solid. A stock solution may be made by dissolving the 3-hydroxyphenylacetic acid in the solvent of choice, which should be purged with an inert gas. 3-Hydroxyphenylacetic acid is soluble in organic solvents such as ethanol and DMSO. The solubility of 3-hydroxyphenylacetic acid in these solvents is approximately 1 mg/ml.

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-hydroxyphenylacetic acid can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 3-hydroxyphenylacetic acid in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

3-Hydroxyphenylacetic acid is a phenolic acid with diverse biological activities.¹⁻⁴ It is formed via microbial metabolism of polyphenolic compounds, including the flavonoid quercetin (Item No. 10005169), by gut microbiota.⁵ 3-Hydroxyphenylacetic acid binds to the γ-hydroxybutyrate receptor (GHB_R; IC₅₀ = 12 μM) and GABA_A receptors in rat cerebrocortical membranes.⁴ It increases the activity of aldehyde dehydrogenase (ALDH) in Hepa-1c1c7 and HepG2 cells and protects Hepa-1c1c7 cells from acetaldehyde-induced cytotoxicity when used at a concentration of 10 μM.³ 3-Hydroxyphenylacetic acid is active against *P. aeruginosa* (MIC = 2.1 mg/ml).² It induces ataxia and decreases locomotor activity in mice (ED₅₀s = 1,677.3 and 1,441.3 mg/kg, respectively), as well as decreases systolic and diastolic blood pressure in spontaneously hypertensive rats when administered at doses ranging from 0.1 to 10 mg/kg.^{1,4}

References

1. Dias, P., Pourová, J., Vopršalová, M., et al. *Nutrients* **14**(2), 328 (2022).
2. Ozdemir, O.O. and Soyer, F. *ACS Omega* **5**(32), 19938-19951 (2020).
3. Liu, Y., Myojin, T., Li, K., et al. *Int. J. Mol. Sci.* **23**(3), 1762 (2022).
4. Carter, L.P., Wu, H., Chen, W., et al. *J. Pharmacol. Exp. Ther.* **313**(3), 1314-1323 (2005).
5. Kim, D.-H., Jung, E.-A., Sohng, I.-S., et al. *Arch. Pharm. Res.* **21**(1), 17-23 (1998).

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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