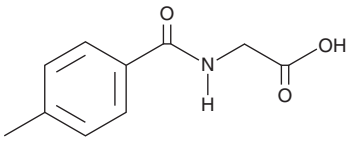
PRODUCT INFORMATION

4-Methylhippuric Acid

Item No. 46067

CAS Registry No.:	27115-50-0
Formal Name:	N-(4-methylbenzoyl)-glycine
Synonyms:	*para*-Methylhippuric Acid, *p*-Methylhippuric Acid, 4-MHA, NSC 126814, *p*-Toluric Acid
MF:	$C_{10}H_{11}NO_3$
FW:	193.2
Purity:	≥95%
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

4-Methylhippuric acid (4-MHA) is supplied as a solid. A stock solution may be made by dissolving the 4-MHA in the solvent of choice, which should be purged with an inert gas. 4-MHA is sparingly soluble (1-10 mg/ml) in ethanol and DMSO.

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 4-MHA can be prepared by directly dissolving the solid in aqueous buffers. 4-MHA is slightly soluble (0.1-1 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

4-MHA is a metabolite of the volatile organic compound (VOC) and organic solvent xylene.[1] It has been used as a urinary biomarker for xylene exposure.[2] Higher urinary levels of 3- and 4-MHA are associated with an increased risk of high-frequency hearing loss and of osteoporosis.[3,4]

References

1. Szúcs, S., Tóth, L., Legoza, J., *et al.* Simultaneous determination of styrene, toluene, and xylene metabolites in urine by gas chromatography/mass spectrometry. *Arch. Toxicol.* **76(10)**, 560-569 (2002).
2. da Deus Honório, T.C., de Oliveira Neto, J.R., Oliveira, F.N.M., *et al.* Occupational exposure evaluation of Brazil university community to the volatile organic compounds. *J. Pharm. Biomed. Anal.* **191**, 113637 (2020).
3. Liu, Y., Long, Z., Qiu, J., *et al.* Combined effects of benzene, toluene, xylene, ethylbenzene, and styrene exposure on hearing loss mediated by oxidative stress at realistic low levels. *Environ. Pollut.* **363(Pt 1)**, 125149 (2024).
4. Zhou, H., Cui, Z., Di, D., *et al.* Connecting volatile organic compounds exposure to osteoporosis risk via oxidative stress based on adverse outcome pathway methodology. *J. Environ. Sci. (China)* **155**, 806-817 (2025).

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