

PRODUCT INFORMATION



4-hydroxy Nonenal Glutathione-d₃

Item No. 9000876

Formal Name: N⁵-((2R)-1-((carboxymethyl)amino)-3-(((3S)-5-hydroxy-2-(pentyl-5,5,5-d₃) tetrahydrofuran-3-yl)thio)-1-oxopropan-2-yl)-D-glutamine

Synonym: 4-HNE-GSH-d₃

MF: C₁₉H₃₀D₃N₃O₈S

FW: 466.6

Chemical Purity: ≥95% (4-hydroxy Nonenal Glutathione-d₃)

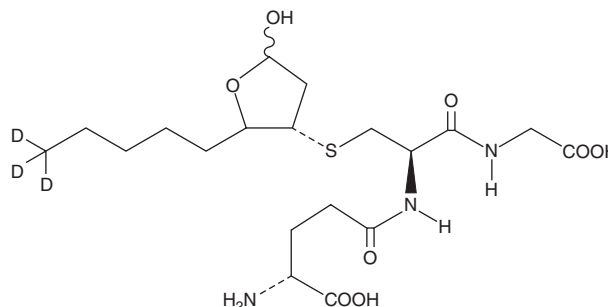
Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀

Supplied as: A lyophilized powder

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-hydroxy Nonenal Glutathione-d₃ (4-HNE-GSH-d₃) is intended for use as an internal standard for the quantification of 4-HNE-GSH by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Description

4-hydroxy-Nonenal (4-HNE) is a major aldehyde produced during the lipid peroxidation of ω-6 polyunsaturated fatty acids, such as arachidonic acid and linoleic acid.^{1,2} 4-HNE-GSH is a major adduct formed by the reaction of 4-HNE with GSH.³⁻⁶ 4-HNE-GSH levels in liver, plasma, or isolated cells can serve as biomarkers for oxidative stress.⁷ The trapping of 4-HNE by glutathione to give HNE-GSH prevents the formation of DNA adducts with 4-HNE.^{8,9} In human polymorphonuclear leukocytes, HNE-GSH is metabolized to 1,4-dihydroxynonene glutathione (DHN-GSH), 4-hydroxynonenoic acid glutathione (HNA-GSH), and 4-hydroxy nonenal mercapturic acid (HNE-MA).³

References

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3. Siems, W., Crifo, C., Capuozzo, E., et al. *Arch. Biochem. Biophys.* **503**(2), 248-252 (2010).
4. Laurent, A., Alary, J., Debrauwer, L., et al. *Chem. Res. Toxicol.* **12**(10), 887-894 (1999).
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6. Alary, J., Fernandez, Y., Debrauwer, L., et al. *Chem. Res. Toxicol.* **16**(3), 320-327 (2003).
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8. King, A.O., Corley, E.G., Anderson, R.K., et al. *J. Org. Chem.* **58**(14), 3731-3735 (1993).
9. Falletti, O., Cadet, J., Favier, A., et al. *Free Radic. Biol. Med.* **42**(8), 1258-1269 (2007).

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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