

# PRODUCT INFORMATION



## 4-hydroxy Nonenal Glutathione (trifluoroacetate salt)

Item No. 10627

**Formal Name:** L-γ-glutamyl-S-[(3)-tetrahydro-5-hydroxy-2-pentyl-3-furanyl]-L-cysteinyglycine

**Synonym:** 4-HNE-GSH

**MF:** C<sub>19</sub>H<sub>33</sub>N<sub>3</sub>O<sub>8</sub>S • CF<sub>3</sub>COOH

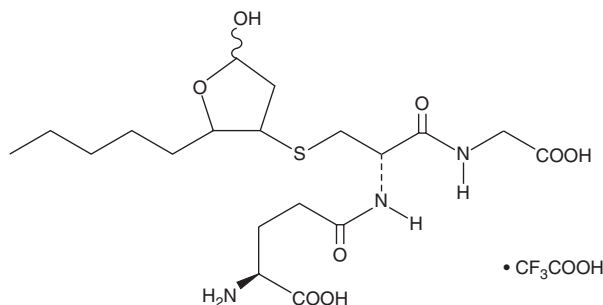
**FW:** 577.6

**Purity:** ≥95%

**Supplied as:** A crystalline solid

**Storage:** -80°C

**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

4-hydroxy Nonenal Glutathione (HNE-GSH) (trifluoroacetate salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the HNE-GSH (trifluoroacetate salt) in water. The solubility of HNE-GSH (trifluoroacetate salt) in water is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

4-hydroxy Nonenal Glutathione (HNE-GSH) is a major adduct formed by the reaction of 4-HNE with GSH.<sup>1-4</sup> 4-HNE-GSH levels in liver, plasma, or isolated cells can serve as biomarkers for oxidative stress.<sup>4</sup> The trapping of 4-HNE by glutathione to give HNE-GSH prevents the formation of DNA adducts with 4-HNE.<sup>6,7</sup> 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).<sup>1</sup>

### References

1. Siems, W., Crifo, C., Capuozzo, E., *et al.* Metabolism of 4-hydroxy-2-nonenal in human polymorphonuclear leukocytes. *Arch. Biochem. Biophys.* **503**(2), 248-252 (2010).
2. Laurent, A., Alary, J., Debrauwer, L., *et al.* Analysis in the rat of 4-hydroxynonenal metabolites excreted in bile: Evidence of enterohepatic circulation of these byproducts of lipid peroxidation. *Chem. Res. Toxicol.* **12**(10), 887-894 (1999).
3. Siems, W. and Grune, T. Intracellular metabolism of 4-hydroxynonenal. *Mol. Aspects Med.* **24**(4-5), 167-175 (2003).
4. Alary, J., Fernandez, Y., Debrauwer, L., *et al.* Identification of intermediate pathways of 4-hydroxynonenal metabolism in the rat. *Chem. Res. Toxicol.* **16**(3), 320-327 (2003).
5. Völkel, W., Alvarez-Sánchez, R., Weick, I., *et al.* Glutathione conjugates of 4-hydroxy-2(E)-nonenal as biomarkers of hepatic oxidative stress-induced lipid peroxidation in rats. *Free Radic. Biol. Med.* **38**(11), 1526-1536 (2005).
6. King, A.O., Corley, E.G., Anderson, R.K., *et al.* An efficient synthesis of LTD4 antagonist L-699,392. *J. Org. Chem.* **58**(14), 3731-3735 (1993).
7. Falletti, O., Cadet, J., Favier, A., *et al.* Trapping of 4-hydroxynonenal by glutathione efficiently prevents formation of DNA adducts in human cells. *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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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM