

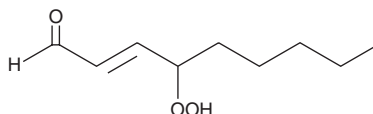
PRODUCT INFORMATION



4-hydroperoxy 2-Nonenal

Item No. 10004413

CAS Registry No.: 7439-43-2
Formal Name: 4-hydroperoxy-2E-nonenal
Synonym: 4-HpNE
MF: C₉H₁₆O₃
FW: 172.2
Purity: ≥95%
UV/Vis.: λ_{max}: 217 nm
Supplied as: A solution in acetone
Storage: -80°C
Stability: ≥1 year



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

Laboratory Procedures

4-hydroperoxy 2-Nonenal is supplied as a solution in acetone. To change the solvent, simply evaporate the acetone under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of 4-hydroperoxy 2-nonenal in these solvents is approximately 30 mg/ml.

4-hydroperoxy 2-Nonenal is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the acetonic solution of 4-hydroperoxy 2-nonenal should be diluted with the aqueous buffer of choice. 4-hydroperoxy 2-Nonenal has a solubility of 0.5 mg/ml in a 1:6 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

4-hydroxy Nonenal (4-HNE; Item No. 32100) is a lipid peroxidation product derived from oxidized ω-6 polyunsaturated fatty acids, such as linoleic acid and arachidonic acid, that is widely used as a marker of oxidative stress.^{1,2} 4-HNE exhibits various biological activities such as cytotoxicity, growth inhibiting activity, genotoxicity, and chemotactic activity.¹⁻³ 4-hydroperoxy 2-Nonenal is the immediate precursor of 4-HNE formed from the cleavage of ω-6 hydroperoxides.⁴ Analogous reactions are expected to occur with hydroperoxides from other ω-6 fatty acids, particularly arachidonic acid.

References

1. Pryor, W.A. and Porter, N.A. Suggested mechanisms for the production of 4-hydroxy-2-nonenal from the autoxidation of polyunsaturated fatty acids. *Free Radic. Biol. Med.* **8(6)**, 541-543 (1990).
2. Esterbauer, H., Schaur, R.J., and Zollner, H. Chemistry and biochemistry of 4-hydroxynonenal, malonaldehyde, and related aldehydes. *Free Radic. Biol. Med.* **11(1)**, 81-128 (1991).
3. Sodum, R.S. and Chung, F.L. 1,N²-ethenodeoxyguanosine as a potential marker for DNA adduct formation by *trans*-4-hydroxy-2-nonenal. *Cancer Res.* **48(2)**, 320-323 (1988).
4. Schneider, C., Tallman, K.A., Porter, N.A., *et al.* Two distinct pathways of formation of 4-hydroxynonenal. Mechanisms of nonenzymatic transformation of the 9- and 13-hydroperoxides of linoleic acid to 4-hydroxyalkenals. *J. Biol. Chem.* **276(24)**, 20831-20838 (2001).

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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