

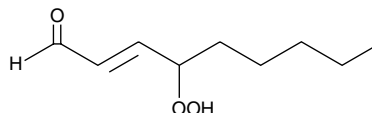
Product Information



4-hydroperoxy 2-Nonenal

Item No. 10004413

CAS Registry No.: 7439-43-2
Formal Name: 4-hydroperoxy-2E-nonenal
MF: C₉H₁₆O₃
FW: 172.2
Purity: ≥95%
Stability: ≥1 year at -80°C
Supplied as: A solution in acetone
UV/Vis.: λ_{max}: 217, 271 nm



Laboratory Procedures

For long term storage, we suggest that 4-hydroperoxy 2-nonenal be stored as supplied at -80°C. It should be stable for at least one year.

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 at least 30 mg/ml.

4-hydroperoxy 2-Nonenal is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the acetone 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.

4-hydroxy Nonenal (4-HNE) 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**, 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**, 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**, 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).

Related Products

4-oxo-2-Nonenal - Item No. 10185 • 4-hydroxy Nonenal - Item No. 32100 • 4-hydroxy Nonenal Mercapturic Acid - Item No. 32110 • 4-hydroxy Nonenal-d₃ - Item No. 332101 • 4-oxo-2-Nonenal-d₃ - Item No. 10004174

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY; NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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