

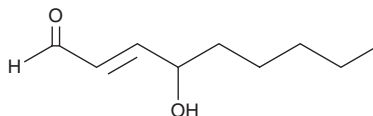
PRODUCT INFORMATION



4-hydroxy Nonenal

Item No. 32100

CAS Registry No.: 75899-68-2
Formal Name: (±)-4-hydroxy-2E-nonenal
Synonym: 4-HNE
MF: C₉H₁₆O₂
FW: 156.2
Purity: ≥98%
UV/Vis.: λ_{max}: 221 nm
Supplied as: A solution in ethanol
Storage: -80°C
Stability: ≥6 months



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

Laboratory Procedures

4-HNE is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of 4-HNE in these solvents is approximately 50 mg/ml.

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. If an organic solvent-free solution of 4-HNE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 4-HNE in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

4-HNE is a lipid peroxidation product derived from oxidized ω-6 polyunsaturated fatty acids such as arachidonic acid.^{1,2} 4-HNE is widely used as a marker of lipid peroxidation.² It exhibits various biological activities such as cytotoxicity, growth inhibiting activity, genotoxicity, and chemotactic activity.¹⁻³ 4-HNE inhibits pro-oxidant-induced Ca²⁺ release from mitochondria at 10-50 μM.²

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).

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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