

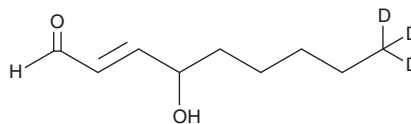
PRODUCT INFORMATION



4-hydroxy Nonenal-d₃

Item No. 332101

CAS Registry No.: 148706-06-3
Formal Name: (±)-4-hydroxy-9,9,9-d₃-non-2E-enal
Synonym: 4-HNE-d₃
MF: C₉H₁₃D₃O₂
FW: 159.2
Chemical Purity: ≥98% (4-hydroxy Nonenal)
Deuterium
Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
UV/Vis.: λ_{max}: 220 nm
Supplied as: A solution in methyl acetate
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-hydroxy Nonenal-d₃ (4-HNF-d₃) is intended for use as an internal standard for the quantification of 4-HNE 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).

4-HNF-d₃ is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of 4-HNF-d₃ in ethanol is approximately 50 mg/ml and approximately 25 mg/ml in DMSO and DMF.

Description

4-HNF-d₃ contains three deuterium atoms at the terminal methyl position. It is intended for use as an internal standard for the quantification of 4-HNE by GC- or LC-mass spectrometry. 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**(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).

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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