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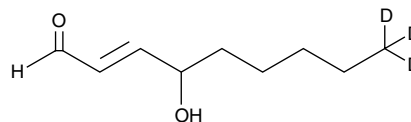
Product Information



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: ≥99%
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃); ≤1% d₀
Stability: ≥6 months at -80°C
Supplied as: A solution in methyl acetate
UV/Vis.: λ_{max}: 220 nm



Laboratory Procedures

4-hydroxy Nonenal-d₃ (4-HNE-d₃) contains three deuterium atoms at the terminal methyl position. It is intended for use as an internal standard for the quantification of latanoprost by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that 4-HNE-d₃ be stored as supplied at -80°C. It will be stable for at least six months.

4-HNE-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 dimethylformamide (DMF) purged with an inert gas can be used. The solubility of 4-hydroxy Nonenal-d₃ in these solvents is approximately 25 mg/ml.

4-HNE-d₃ is used as an internal standard for the quantification of 4-HNE by stable isotope dilution 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-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).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/332101

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

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 Safety Data Sheet, which has been sent via email to your institution.

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