

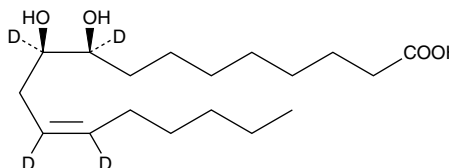
Product Information



(±)9,10-DiHOME-d₄

Item No. 10009993

Formal Name: 9,10-dihydroxy-12Z-octadecenoic-9,10,12,13-d₄ acid
Synonyms: Leukotoxin diol-d₄
MF: C₁₈H₃₀D₄O₄
FW: 318.5
Chemical Purity: ≥98%
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Stability: ≥1 year at -20°C
Supplied as: A solution in methyl acetate



Laboratory Procedures

(±)9,10-DiHOME-d₄ contains four deuterium atoms at the 9, 10, 12, and 13 positions. It is intended for use as an internal standard for the quantification of (±)9,10-DiHOME by GC- or LC-mass spectrometry (MS). For long term storage, we suggest that (±)9,10-DiHOME-d₄ be stored as supplied at -20°C. It will be stable for approximately one year.

(±)9,10-DiHOME-d₄ 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 (±)9,10-DiHOME-d₄ in these solvents is approximately 20 mg/ml.

(±)9,10-DiHOME-d₄ is used as an internal standard for the quantification of (±)9,10-DiHOME 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).

Leukotoxin is the 9(10)-epoxide of linoleic acid, generated by neutrophils during the oxidative burst.¹⁻³ This unstable compound is rapidly degraded by epoxide hydrolases to form the diol, 9,10-DiHOME.⁴ Mitochondrial dysfunction, vasodilation, and apoptosis are features of leukotoxin toxicity. In renal proximal tubular cells, the diol hydrolysis products of leukotoxin, such as 9,10-DiHOME, have been directly implicated as the cytotoxic agent responsible for cell death.⁵

References

- Hayakawa, M., Sugiyama, S., Takamura, T., *et al.* Neutrophils biosynthesize leukotoxin, 9,10-epoxy-12-octadecenoate. *Biochem. Biophys. Res. Commun.* **137**, 424-430 (1986).
- Ishizaki, T., Takahashi, H., Ozawa, T., *et al.* Leukotoxin, 9,10-epoxy-12-octadecenoate causes pulmonary vasodilation in rats. *J. Am. Physiol. Soc.* **1040**, L123-L128 (1995).
- Ozawa, T., Hayakawa, M., Takamura, T., *et al.* Biosynthesis of leukotoxin, 9,10-epoxy-12 octadecenoate, by leukocytes in lung lavages of rat after exposure to hyperoxia. *Biochem. Biophys. Res. Commun.* **134**, 1071-1078 (1986).
- Greene, J.E., Williamson, K.C., Newman, J.W., *et al.* Metabolism of monoepoxides of methyl linoleate: bioactivation and detoxification. *Arch. Biochem. Biophys.* **376**, 420-432 (2000).
- Moran, J.H., Weise, R., Schnellmann, R.G., *et al.* Cytotoxicity of linoleic acid diols to renal proximal tubular cells. *Toxicol. Appl. Pharmacol.* **146**, 53-59 (1997).

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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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