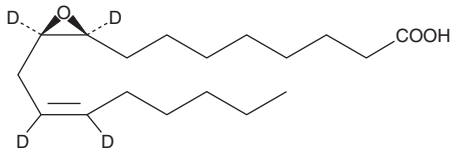
PRODUCT INFORMATION

(±)9(10)-EpOME-d4

Item No. 10009995

Formal Name: (±)9(10)epoxy-12Z-octadecenoic 9,10,12,13-d4 acid
Synonyms: (±)9,10-EODE-d4, Leukotoxin-d4,**MF:** $C_{18}H_{28}D_4O_3$
FW: 300.5
Chemical Purity: ≥98%
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly



NOTE: Relative stereochemistry shown in chemical structure

Laboratory Procedures

(±)9,10-EpOME-d_4 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-EpOME by GC- or LC-mass spectrometry (MS).

(±)9,10-EpOME-d_4 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 purged with an inert gas can be used. The solubility of (±)9,10-EpOME-d_4 in is these solvents is approximately 50 mg/ml.

(±) 9,10-EpOME-d_4 is used as an internal standard for the quantification of (±)9,10-EpOME (Item No. 52400) 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).

Description

(±)9(10)-EpOME is the 9,10-*cis* epoxide of linoleic acid, generated by neutrophils during the oxidative burst.[1] It has been recovered from the lungs of hyperoxic rats and from humans with acute respiratory distress syndrome.[2] Mitochondrial dysfunction is the main feature of (±)9(10)-EpOME cytotoxicity, which may be due to the diol metabolites as well as the parent epoxide.[3,4]

References

1. Hayakawa, M., Sugiyama, S., Takamura, T., *et al.* Neutrophils biosynthesize leukotoxin, 9,10-epoxy-12-octadecenoate. *Biochem. Biophys. Res. Commun.* **137**, 424-430 (1986).
2. 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).
3. Kosaka, K., Suzuki, K., Hayakawa, M., *et al.* Leukotoxin, a linoleate epoxide: Its implication in the late death of patients with extensive burns. *Mol. Cell. Biochem.* **139**, 141-148 (1994).
4. 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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