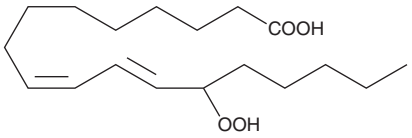
PRODUCT INFORMATION

(±)13-HpODE

Item No. 10704

CAS Registry No.: 23017-93-8
Formal Name: (±)13-hydroperoxy-9Z,11E-octadecadienoic acid
MF: $C_{18}H_{32}O_4$
FW: 312.4
Purity: ≥95%
Supplied as: A solution in ethanol
Storage: -80°C
Stability: ≥2 years



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

Laboratory Procedures

(±)13-HpODE 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 (±)13-HpODE 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 (±)13-HpODE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)13-HpODE in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)13-HpODE is a racemic mixture of hydroperoxides derived non-enzymatically from linoleic acid through the action of reactive oxygen species. Lipid hydroperoxides, including 13-HpODE, have limited direct biological actions, such as the activation of lipoxygenases.[1] Normally, (±)13-HpODE is rapidly reduced to (±)13-HODE, a compound which exhibits many biological activities.[2] Importantly, 13-HpODE can also be metabolized to unsaturated aldehydes that can, in turn, covalently bind to DNA, amino acids, and proteins.[3-5]

References

1. Jones, G.D., Russell, L., Darley-Usmar, V.M., *et al.* Role of lipid hydroperoxides in the activation of 15-lipoxygenase. *Biochem.* **35**, 7197-7203 (1996).
2. Kühn, H. Biosynthesis, metabolization and biological importance of the primary 15-lipoxygenase metabolites 15-hydro(pero)xy-5Z,8Z,11Z,13E-eicosatetraenoic acid and 13-hydro(pero)xy-9Z,11E-octadecadienoic acid. *Prog. Lipid Res.* **35**, 203-226 (1996).
3. Williams, M.V., Wishnok, J.S., and Tannenbaum, S.R. Covalent adducts arising from the decomposition products lipid hydroperoxides in the presence of cytochrome C. *Chem. Res. Toxicol.* **20(5)**, 767-75 (2007).
4. Iwahashi, H., Nishizaki, K., and Takagi, I. Cytochrome C catalyzes the formation of pentyl radical and octanoic acid radical from linoleic acid hydroperoxide. *Biochem. J.* **361**, 57-66 (2002).
5. Kawai, Y., Kato, Y., Fujii, H., *et al.* Immunochemical detection of a novel lysine adduct using an antibody to linoleic acid hydroperoxide-modifies protein. *J. Lipid Res.* **44**, 1124-1131 (2003).

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