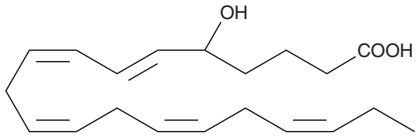
PRODUCT INFORMATION

(±)5-HEPE

Item No. 32200

CAS Registry No.:	83952-40-3
Formal Name:	(±)-5-hydroxy-6E,8Z,11Z,14Z,17Z-eicosapentaenoic acid
MF:	$C_{20}H_{30}O_3$
FW:	318.5
Purity:	≥97%
UV/Vis.:	λ_{max}: 236 nm
Supplied as:	A solution in ethanol
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

(±)5-HEPE is supplied as a solution in ethanol. To change the solvent, 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. (±)5-HEPE is miscible in these solvents.

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 (±)5-HEPE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)5-HEPE in PBS, pH 7.2, is approximately 0.8 mg/ml. For greater aqueous solubility, (±)5-HEPE can be directly dissolved in 0.1 M Na_2CO_3 (solubility of 2 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. We do not recommend storing the aqueous solution for more than one day.

Description

(±)5-HEPE is produced by non-enzymatic oxidation of eicosapentaenoic acid. It contains equal amounts of 5(S)-HEPE and 5(R)-HEPE. The biological activity of (±)5-HEPE is likely mediated by one of the individual isomers, most commonly the 5(S) isomer in mammalian systems. EPA can be metabolized to 5-HEPE in human and bovine neutrophils, and human eosinophils, which is further metabolized to 5-oxoEPE and LTB_5.[1-3] The 5-series metabolites of EPA, namely 5-HEPE, 5-oxoEPE, and LTB_5, have significantly decreased biological effects compared to the arachidonic acid-derived metabolites.[3]

References

1. Powell, W.S., Gravel, S., and Gravelle, F. Formation of a 5-oxo metabolite of 5,8,11,14,17-eicosapentaenoic acid and its effects on human neutrophils and eosinophils. *J. Lipid Res.* **36**, 2590-2598 (1995).
2. Lee, T.H., Mencia-Huerta, J.-M., Shih, C., *et al.* Effects of exogenous arachidonic, eicosapentaenoic, and docosahexaenoic acids on the generation of 5-lipoxygenase pathway products by ionophore-activated human neutrophils. *J. Clin. Invest.* **74**, 1922-1933 (1984).
3. Taylor, S.M., Laegreid, W.W., Heidel, J.R., *et al.* Arachidonic and eicosapentaenoic acid metabolism in bovine neutrophils and platelets: effect of calcium ionophore. *J. Leukoc. Biol.* **42**, 253-262 (1987).

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