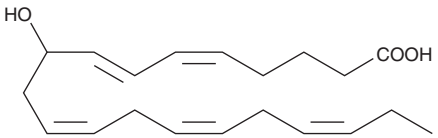
PRODUCT INFORMATION

(±)9-HEPE

Item No. 32400

CAS Registry No.: 286390-03-2
Formal Name: (±)-9-hydroxy-5Z,7E,11Z,14Z,17Z-eicosapentaenoic acid
MF: $C_{20}H_{30}O_3$
FW: 318.5
Purity: ≥98%
UV/Vis.: λ_{max}: 235 nm
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years
Special Conditions: Oxygen and light sensitive



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

Laboratory Procedures

(±)9-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. (±)9-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 (±)9-HEPE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)9-HEPE in PBS, pH 7.2, is approximately 0.8 mg/ml. For greater aqueous solubility, (±)9-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

(±)9-HEPE is a racemic mixture of the monohydroxy fatty acids 9(R)-HEPE and 9(S)-HEPE (Item No. 32410). It is produced by non-enzymatic oxidation of eicosapentaenoic acid (EPA; Item Nos. 90110 | 21908 | 90110.1).[1] (±)9-HEPE (128 µM) induces peroxisome proliferator-activated receptor α (PPARα), PPARγ, and PPARδ transactivation in NIH3T3 cells expressing the mouse receptors.[2] It reduces increases in the expression of the genes encoding inducible nitric oxide synthase (iNOS), TNF-α, IL-1β, and IL-6 in isolated mouse peritoneal macrophages induced by palmitate, as well as inhibits palmitate-induced migration of isolated mouse peritoneal macrophages, when used at a concentration of 1 µM.[3] (±)9-HEPE decreases hepatic triglyceride levels and plasma LDL-cholesterol and total cholesterol levels in a mouse model of high-fat diet-induced hepatic steatosis when administered in combination with (±)5-HEPE (Item No. 32200) and (±)17,18-EEQ ((±)17(18)-EpETE; Item No. 50861).

References

1. Fischer, R., Konkel, A., Mehling, H., *et al.* Dietary omega-3 fatty acids modulate the eicosanoid profile in man primarily via the CYP-epoxygenase pathway. *J. Lipid Res.* **55(6)**, 1150-1164 (2014).
2. Yamada, H., Oshiro, E., Kikuchi, S., *et al.* Hydroxyeicosapentaenoic acids from the Pacific krill show high ligand activities for PPARs. *J. Lipid Res. 55(5)*, 895-904 (2014).
3. Wang, C., Liu, W., Yao, L., *et al.* Hydroxyeicosapentaenoic acids and epoxyeicosatetraenoic acids attenuate early occurrence of nonalcoholic fatty liver disease. *Br. J. Pharmacol.* **174(14)**, 2358-2372 (2017).

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