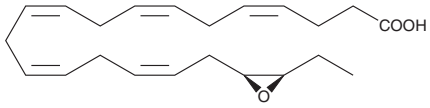
PRODUCT INFORMATION

(±)19(20)-EpDPA

Item No. 10175

Formal Name: (±)19,20-epoxy-4Z,7Z,10Z,13Z,16Z-docosapentaenoic acid
Synonyms: (±)19,20 EDP, (±)19,20-epoxy Docosapentaenoic Acid, (±)19,20-epoxy DPA, (±)19,20-EpDPE
MF: $C_{22}H_{32}O_3$
FW: 344.5
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



NOTE: Relative stereochemistry shown in chemical structure

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

Laboratory Procedures

(±)19(20)-EpDPA 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 ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of (±)19(20)-EpDPA 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 (±)19(20)-EpDPA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)19(20)-EpDPA in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)-19(20)-EpDPA is an epoxide metabolite of docosahexaenoic acid (DHA; Item Nos. 90310 | 17950).[1] It is formed from DHA by various cytochrome P450 (CYP) isoforms. *In vivo*, (±)-19(20)-EpDPA (100 ng/animal, i.p.) suppresses hepatic crown-like structure (hCLS) formation and liver fibrosis in wild-type, but not GPR120-deficient, mice in a model of non-alcoholic steatohepatitis (NASH) induced by high-fat diet and carbon tetrachloride (CCl_4).[2] Intraplantar administration of (±)-19(20)-EpDPA induces acute mechanical hyperalgesia in mice, an effect that can be blocked by the transient receptor potential ankyrin 1 (TRPA1) inhibitor A-967079 (Item No. 15207).[3]

References

1. Lucas, D., Goulitquer, S., Marienhagen, J., *et al.* Stereoselective epoxidation of the last double bond of polyunsaturated fatty acids by human cytochromes P450. *J. Lipid Res.* **51(5)**, 1125-1133 (2010).
2. Aoki, H., Isobe, Y., Yoshida, M., *et al.* Enzymatically-epoxidized docosahexaenoic acid, 19,20-EpDPE, suppresses hepatic crown-like structure formation and nonalcoholic steatohepatitis fibrosis through GPR120. *Biochim. Biophys. Acta Mol. Cell Biol. Lipids* **1868(3)**, 159275 (2023).
3. Sun, L., Zhang, J., Niu, C., *et al.* CYP1B1-derived epoxides modulate the TRPA1 channel in chronic pain. *Acta Pharm. Sinica B* 1-14 (2022).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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