

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: C₂₂H₃₂O₃

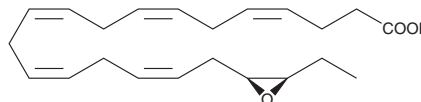
FW: 344.5

Purity: ≥98%

Supplied as: A solution in ethanol

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

(±)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

EDHF (endothelium-derived hyperpolarizing factor) is an unidentified mediator released from vascular endothelial cells in response to acetylcholine and bradykinin which is distinct from the NOS- (nitric oxide) and COX-derived (prostacyclin) vasodilators.^{1,2} Cytochrome P450 (CYP450) metabolism of polyunsaturated fatty acids, produces epoxides such as (±)14(15)-EpETrE (Item No. 50651) which are prime candidates for the actual active mediator.³ However, the CYP450 metabolites of eicosapentaenoic acid (EPA; Item No. 90110) and docosahexaenoic acid (DHA; Item No. 90310) have been little studied relative to arachidonate epoxygenase metabolites. (±)19(20)-EpDPA is a DHA epoxygenase metabolite, derived via epoxidation of the ω-3 double bond of DHA. The EDHF activity of (±)19(20)-EpDPA has not yet been determined. The epoxygenase metabolites of DHA have also been detected in a mouse inflammation model.⁴

References

1. Chataigneau, T., Félétou, M., Duhault, J., *et al.* *Br. J. Pharmacol.* **123**, 574-580 (1998).
2. Fisslthaler, B., Popp, R., Kiss, L., *et al.* *Nature* **401**, 493-497 (1999).
3. Baron, A., Frieden, M., and Bény, J.-L. *J. Physiol.* **504**, 537-543 (1997).
4. Serhan, C.N., Hong, S., Gronert, K., *et al.* *J. Exp. Med.* **196(8)**, 1025-1037 (2002).

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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