

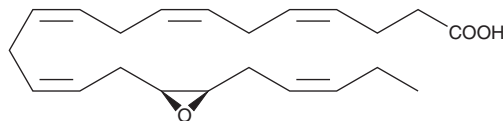
Product Information



16(17)-EpDPE

Catalog No. 10174

Formal Name: (±)16(17)-epoxy-4Z,7Z,10Z,13Z,19Z-docosapentaenoic acid
Synonym: 16,17-epoxy Docosapentaenoic Acid
MF: C₂₂H₃₂O₃
FW: 344.5
Purity: ≥90%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that 16(17)-EpDPE be stored as supplied at -20°C. It should be stable for at least one year.

16(17)-EpDPE 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 16(17)-EpDPE 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 16(17)-EpDPE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 16(17)-EpDPE in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

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)-EpETE which are prime candidates for the actual active mediator.³ However, the CYP450 metabolites of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) have been little studied relative to arachidonate epoxygenase metabolites. 16(17)-EpDPE is the DHA homolog of 14(15)-EpETE, derived *via* epoxidation of the 16,17-double bond of DHA. The EDHF activity of 16(17)-EpDPE has not yet been determined. The epoxygenase metabolites of DHA have also been detected in a murine inflammation model.⁴

References

1. Chataigneau, T., Féléto, M., Duhault, J., *et al.* Epoxyeicosatrienoic acids, potassium channel blockers and endothelium-dependent hyperpolarization in the guinea-pig carotid artery. *Br. J. Pharmacol.* **123**, 574-580 (1998).
2. Fisslthaler, B., Popp, R., Kiss, L., *et al.* Cytochrome P450 2C is an EDHF synthase in coronary arteries. *Nature* **401**, 493-497 (1999).
3. Baron, A., Frieden, M., and Bény, J.-L. Epoxyeicosatrienoic acids activate a high-conductance, Ca²⁺-dependent K⁺ channel on pig coronary artery endothelial cells. *J. Physiol.* **504**, 537-543 (1997).
4. Serhan, C.N., Hong, S., Gronert, K., *et al.* Resolvins: a family of bioactive products of ω-3 fatty acid transformation circuits by aspirin treatment that counter proinflammation signals. *J. Exp. Med.* **196(8)**, 1025-1037 (2002).

Related Products

14(15)-EpETE - Cat. No. 10173 • 19(20)-EpDPE - Cat. No. 10175 • (±)5(6)-EpETE - Cat. No. 50211 • (±)8(9)-EpETE - Cat. No. 50351 • (±)14(15)-EpETE - Cat. No. 50651 • 17(18)-EpETE - Cat. No. 50861 • Docosahexaenoic Acid - Cat. No. 90310 • 4,5-epoxy Docosapentaenoic Acid methyl ester - Cat. No. 90314

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

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