

PRODUCT INFORMATION



(±)7(8)-EpDPA

Item No. 10465

CAS Registry No.: 895127-66-9
Formal Name: (±)-(4Z)-6-[3-(2Z,5Z,8Z,11Z)-2,5,8,11-tetradecatetraen-1-yl-2-oxiranyl]-4-hexenoic acid
Synonyms: (±)7,8-EDP, (±)7,8-EpDPE, (±)7,8-epoxy DPA, (±)7,8-epoxy Docosapentaenoic Acid

MF: C₂₂H₃₂O₃

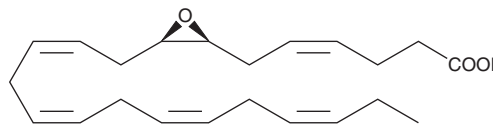
FW: 344.5

Purity: ≥95%

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

(±)7(8)-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 (±)7(8)-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 (±)7(8)-EpDPA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)7(8)-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

Docosahexaenoic acid (DHA, Item No. 90310) is the most abundant ω-3 fatty acid in neural tissues, especially in the brain and retina. (±)7(8)-EpDPA is an epoxide derivative of DHA that is generated by the action of cytochrome P450 epoxygenases.¹ It is naturally occurring in plasma and brain and spinal cord tissues and is increased following dietary supplementation with ω-3 fatty acids.^{2,3} (±)7(8)-EpDPA and other epoxy metabolites of DHA modulate receptor and channel activities to evoke diverse effects, such as promoting vasodilation, inhibiting angiogenesis, and decreasing inflammatory and neuropathic pain.³⁻⁶ (±)7(8)-EpDPA is a substrate of soluble epoxide hydrolase (K_M = 15 μM), which converts it to the corresponding diol.³

References

1. Spector, A.A. and Kim, H.Y. *Biochim. Biophys. Acta* **1851(4)**, 356-365 (2015).
2. Fischer, R., Konkel, A., Mehling, H., et al. *J. Lipid Res.* **55(6)**, 1150-1164 (2014).
3. Morisseau, C., Inceoglu, B., Schmelzer, K., et al. *J. Lipid Res.* **51**, 3481-3490 (2010).
4. Zhang, G., Panigrahy, D., Mahakian, L.M., et al. *Proc. Natl. Acad. Sci. USA* **110(16)**, 6530-6535 (2013).
5. Wang, R., Chai, Q., Lu, T., et al. *Cardiovasc. Res.* **90**, 344-352 (2011).
6. Sato, K., Chino, D., Nishioka, N., et al. *Biol. Pharm. Bull.* **37(3)**, 394-403 (2014).

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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