

PRODUCT INFORMATION



(±)10(11)-EpDPA

Item No. 10471

CAS Registry No.: 895127-65-8
Formal Name: (±)-(4Z,7Z)-9-[3-(2Z,5Z,8Z)-2,5,8-undecatrien-1-yl-2-oxiranyl]-4,7-nonadienoic acid

Synonyms: (±)10,11-EDP, (±)10,11-EpDPE, (±)10,11-epoxy DPA, (±)10,11-epoxy Docosapentaenoic Acid

MF: C₂₂H₃₂O₃

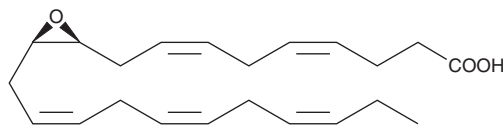
FW: 344.5

Purity: ≥95%

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

(±)10(11)-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 (±)10(11)-EpDPA in these solvents is approximately 50, 20, and 25 mg/ml, respectively.

(±)10(11)-EpDPA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of (±)10(11)-EpDPA should be diluted with the aqueous buffer of choice. (±)10(11)-EpDPA has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Cytochrome P450 metabolism of polyunsaturated fatty acids produces numerous bioactive epoxide regioisomers. (±)10(11)-EpDPA is a docosahexaenoic acid (DHA; Item No. 90310) epoxygenase metabolite, derived *via* epoxidation of the 10,11-double bond of DHA. It has been detected in rat brain and spinal cord, as well as human serum, and acts as a substrate for soluble epoxide hydrolase with a K_m value of 5.1 μM.^{1,2} (±)10(11)-EpDPA and other epoxy metabolites of DHA are reported to demonstrate antihyperalgesic activity in inflammatory and neuropathic pain models and to potentially inhibit angiogenesis and tumor growth in *in vitro* assays.^{1,3}

References

1. Morisseau, C., Inceoglu, B., Schmelzer, K., *et al.* Naturally occurring monoepoxides of eicosapentaenoic acid and docosahexaenoic acid are bioactive antihyperalgesic lipids. *J. Lipid Res.* **51**, 3481-3490 (2010).
2. Lundström, S.L., Yang, J., Brannan, J.D., *et al.* Lipid mediator serum profiles in asthmatics significantly shift following dietary supplementation with omega-3 fatty acids. *Mol. Nutr. Food Res.* **57(8)**, 1378-1389 (2013).
3. Zhang, G., Panigrahy, D., Mahakian, L.M., *et al.* Epoxy metabolites of docosahexaenoic acid (DHA) inhibit angiogenesis, tumor growth, and metastasis. *Proc. Natl. Acad. Sci. USA* **110(16)**, 6530-6535 (2013).

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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