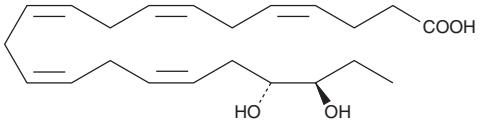
PRODUCT INFORMATION

(±)19(20)-DiHDPA

Item No. 10007001

Formal Name:	(±)19,20-dihydroxy-4Z,7Z,10Z,13Z,16Z-docosapentaenoic acid
Synonyms:	19(20)-DHDP, (±)19,20-DiHDoPE
MF:	$C_{22}H_{34}O_4$
FW:	362.5
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)-DiHDPA 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 (±)19(20)-DiHDPA 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)-DiHDPA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)19(20)-DiHDPA in PBS (pH 7.2) is approximately 0.25 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Docosahexaenoic acid (DHA; Item No. 90310) is an essential fatty acid and the most abundant ω-3 fatty acid in neural tissues, especially in the retina and brain.[1] (±)19(20)-DiHDPA is one of the major metabolites produced when DHA is incubated with NADPH-supplemented rat liver microsomes.[2] DHA is also slowly metabolized by monkey seminal vesicles to (±)19(20)-DiHDPA.[3] The route of production likely proceeds through cytochrome P450-catalyzed epoxidation at the ω-3 double bond, followed by conversion to the vicinal diols by epoxide hydrolase.[2,3]

References

1. Salem, N., Kim, H.-Y., and Yergey, J.A. Docosahexaenoic acid: Membrane function and metabolism. *Health effects of polyunsaturated fatty acids in seafoods*. Simopoulos, A.P., Kifer, R.R., and Martin, R.E., editors, *Academic Press, Inc.* (1986).
2. VanRollins, M., Baker, R.C., Sprecher, H., *et al.* Oxidation of docosahexaenoic acid by rat liver microsomes. *J. Biol. Chem.* **259(9)**, 5776-5783 (1984).
3. Oliw, E.H. and Sprecher, H.W. Metabolism of polyunsaturated (*n*-3) fatty acids by monkey seminal vesicles: Isolation and biosynthesis of ω-3 epoxides. *Biochim. Biophys. Acta* **1086(3)**, 287-294 (1991).

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