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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

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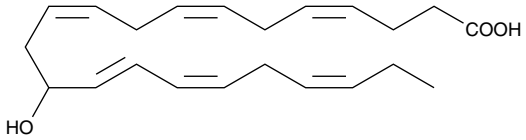
Product Information

(±)13-HDHA

Item No. 33500

CAS Registry No.: 90780-53-3
Formal Name: (±)13-hydroxy-4Z,7Z,10Z,14E,16Z, 19Z-docosahexaenoic acid
Synonyms: 13-hydroxy Docosahexaenoic Acid, (±)13-HDoHE
MF: $C_{22}H_{32}O_3$
FW: 344.5
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A solution in ethanol
UV/Vis: λ_{max}: 236 nm symbol: 22,000



Laboratory Procedures

For long term storage, we suggest that (±)13-HDHA be stored as supplied at -20°C. It should be stable for at least two years.

(±)13-HDHA 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. (±)13-HDHA is miscible in these solvents.

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 (±)13-HDHA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)13-HDHA in PBS (pH 7.2) is approximately 0.8 mg/ml. We do not recommend storing the aqueous solution for more than one day.

(±)13-HDHA is an autoxidation product of docosahexaenoic acid (DHA) *in vitro*.[1,2] It is also produced from incubations of DHA in rat liver, brain, and intestinal microsomes.[3-5] Fresh water hydra metabolize DHA to 13(R)-HDHA, presumably *via* 11(R)-lipoxygenase.[6] (±)13-HDHA is a potential marker of oxidative stress in brain and retina where DHA is an abundant polyunsaturated fatty acid.

References

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2. Reynaud, D., Thickitt, C.P., and Pace-Asciak, C.R. Facile preparation and structural determination of monohydroxy derivatives of docosahexaenoic acid (HDoHE) by α-tocopherol-directed autoxidation. *Anal. Biochem.* **214**, 165-170 (1993).
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5. Kim, H.Y., Karanian, J.W., Shingu, T., *et al.* Sterochemical analysis of hydroxylated docosahexaenoates produced by human platelets and rat brain homogenate. *Prostaglandins* **40**, 473-491 (1990).
6. Di Marzo, V., Gianfrani, C., De Petrocellis, L., *et al.* Polyunsaturated-fatty-acid oxidation in Hydra: Regioselectivity, substrate-dependent enantioselectivity and possible biological role. *Biochem. J.* **300**, 501-507 (1994).

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