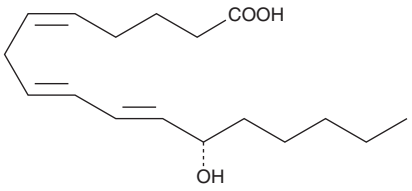
PRODUCT INFORMATION

12(S)-HHTrE

Item No. 34590

CAS Registry No.: 54397-84-1
Formal Name: 12S-hydroxy-5Z,8E,10E-heptadecatrienoic acid
Synonym: 12(S)-HHT
MF: $C_{17}H_{28}O_3$
FW: 280.4
Purity: ≥95%
UV/Vis.: λ_{max}: 232 nm ε: 33,400
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

12(S)-HHTrE 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 or dimethyl formamide purged with an inert gas can be used. 12(S)-HHTrE 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 12(S)-HHTrE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 12(S)-HHTrE in PBS (pH 7.2) is approximately 0.8 mg/ml. For greater aqueous solubility, 12(S)-HHTrE can be directly dissolved in 0.1 M Na_2CO_3 (2 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. We do not recommend storing the aqueous solution for more than one day.

Description

12(S)-HHTrE is a product of the cyclooxygenase (COX) pathway and one of the primary arachidonic acid metabolites of human platelets.[1] It is biosynthesized by thromboxane (TXA_2) synthase from prostaglandin H_2 (PGH_2) concurrently with TXA_2. 12(S)-HHTrE is a natural lipid agonist of the leukotriene B_2 receptor BLT_2 *in vivo* that induces chemotaxis of mast cells and accelerates wound closure.[2,3] 12(S)-HHTrE is avidly oxidized to 12-oxoHTrE by porcine 15-hydroxy PGDH.[4]

References

1. Diczfalusy, U., Falardeau, P., Hammarström, S. Conversion of prostaglandin endoperoxides to C_{17}-hydroxy acids catalyzed by human platelet thromboxane synthase. *FEBS Lett.* **84,** 271-274 (1977).
2. Okuno, T., Iizuka, Y., Okazaki, H., *et al.* 12(S)-hydroxyheptadeca-5Z, 8E, 10E-trienoic acid is a natural ligand for leukotriene B_4 receptor 2. *J. Exp. Med.* **1-8** (2008).
3. Liu, M., Saeki, K., Matsunobu, T., *et al.* 12-hydroxyheptadecatrienoic acid promotes epidermal wound healing by accelerating keratinocyte migration *via* the BLT_2 receptor. *J. Exp. Med.* **211(6)**, 1063-1078 (2014).
4. Liu, Y., Yoden, K., Shen, R., *et al.* 12-L-Hydroxy-5,8,10-heptadecatrienoic acid (HHT) is an excellent substrate for NAD^+-dependent 15-hydroxyprostaglandin dehydrogenase. *Biochem. Biophys. Res. Commun.* **129,** 268-274 (1985).

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