

Product Information



15(S)-HpETE

Item No. 44720

CAS Registry No.: 70981-96-3

Formal Name: 15S-hydroperoxy-5Z,8Z,11Z,13E-eicosatetraenoic acid

MF: C₂₀H₃₂O₄

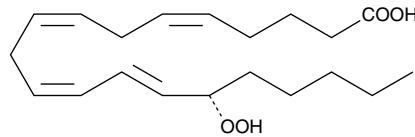
FW: 336.5

Purity: ≥98%

Stability: ≥1 year at -80°C

Supplied as: A solution in ethanol

UV/Vis.: λ_{max}: 236 nm ε: 27,000



Laboratory Procedures

For long term storage, we suggest that 15(S)-HpETE be stored as supplied at -80°C. It should be stable for at least one year.

15(S)-HpETE is supplied as a solution in ethanol. To change the solvent, 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. 15(S)-HpETE 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 15(S)-HpETE is needed, evaporate the ethanol under a gentle stream of nitrogen and dissolve the neat oil in the buffer of choice. The solubility of 15(S)-HpETE in PBS, pH 7.2, is approximately 0.8 mg/ml. For greater aqueous solubility, 15(S)-HpETE can be directly dissolved in 0.1 M Na₂CO₃ (2 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. 15(S)-HpETE is highly unstable in an aqueous solution. We recommend an aqueous solution of 15(S)-HpETE be used within fifteen minutes.

15(S)-HpETE is a monohydroperoxy polyunsaturated fatty acid (PUFA) produced by the action of 15-lipoxygenase on arachidonic acid. 15(S)-HpETE is either metabolized to 14,15-leukotriene A₄ or reduced to 15(S)-HETE by peroxidases.^{1,2} 15(S)-HpETE mediates a number of biological functions including the induction of c-fos and c-jun, and activation of AP-1.³ 15(S)-HpETE inhibits prostacyclin synthesis in porcine aortic microsomes and bovine endothelial cells, and can cause the suicide inactivation of porcine 12-LO.^{1,4,5}

References

1. Kishimoto, K., Nakamura, M., Suzuki, H., *et al.* Suicide inactivation of porcine leukocyte 12-lipoxygenase associated with its incorporation of 15-hydroperoxy-5,8,11,13-eicosatetraenoic acid derivative. *Biochim. Biophys. Acta* **1300**, 56-62 (1996).
2. Bryant, R.W., Schewe, T., Rapoport, S.M., *et al.* Leukotriene formation by a purified reticulocyte lipoxygenase enzyme. Conversion of arachidonic acid and 15-hydroperoxyeicosatetraenoic acid to 14,15-leukotriene A₄. *J. Biol. Chem.* **260**, 3548-3555 (1985).
3. Rao, G.N., Glasgow, W.C., Eling, T.E., *et al.* Role of hydroperoxyeicosatetraenoic acids in oxidative stress-induced activating protein 1 (AP-1) activity. *J. Biol. Chem.* **271**, 27760-27764 (1996).
4. Moncada, S., Gryglewski, R.J., Bunting, S., *et al.* A lipid peroxide inhibits the enzyme in blood vessel microsomes that generates from prostaglandin endoperoxides the substance (prostaglandin X) which prevents platelet aggregation. *Prostaglandins* **12**, 715-737 (1976).
5. Mayer, B., Moser, R., Gleispach, H., *et al.* Possible inhibitory function of endogenous 15-hydroperoxyeicosatetraenoic acid on prostacyclin formation in bovine aortic endothelial cells. *Biochim. Biophys. Acta* **875**, 641-653 (1986).

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