

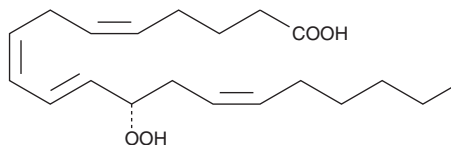
# PRODUCT INFORMATION



## 12(S)-HpETE

Item No. 44570

**CAS Registry No.:** 71774-10-2  
**Formal Name:** 12S-hydroperoxy-5Z,8Z,10E,14Z-eicosatetraenoic acid  
**MF:** C<sub>20</sub>H<sub>32</sub>O<sub>4</sub>  
**FW:** 336.5  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 237 nm  
**Supplied as:** A solution in ethanol  
**Storage:** -80°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

12(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 and dimethyl formamide purged with an inert gas can be used. 12(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 12(S)-HpETE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 12(S)-HpETE in PBS, pH 7.2, is approximately 0.8 mg/ml. For greater aqueous solubility, 12(S)-HpETE can be directly dissolved in 0.1 M Na<sub>2</sub>CO<sub>3</sub> (solubility of 2 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. 12(S)-HpETE is highly unstable in aqueous solutions. We recommend that aqueous solutions of 12(S)-HpETE be kept on ice and used as soon as possible, preferably within 15 minutes.

### Description

12(S)-HpETE is a monohydroperoxy polyunsaturated fatty acid (PUFA) produced by the action of platelet or leukocyte 12-lipoxygenase (12-LO) on arachidonic acid.<sup>1,2</sup> It activates human blood leukocyte 5-LO, resulting in the synthesis of 5(S)-HETE, leukotriene B<sub>4</sub> (LTB<sub>4</sub>), and 5(S),12(S)-DiHETE.<sup>1</sup> Rat lung metabolizes 12(S)-HpETE to 8,11,12- and 10,11,12-trihydroxyeicostrienoic acids.<sup>3</sup> 12(S)-HpETE is the mediator of many biological functions, including induction of c-fos and c-jun, activation of AP-1, and endothelium-dependent vasoconstriction.<sup>4,5</sup> It mediates the inhibitory synaptic response to FMRF-amide in Aplysia sensory neurons<sup>6</sup> and inhibits Ca<sup>2+</sup>/calmodulin-dependent protein kinase II from rat brain cortex.<sup>6,7</sup>

### References

1. Maclouf, J., Fruteau De Lacroix, B., Borgeat, P. *Proc. Natl. Acad. Sci. USA* **79**, 6042-6046 (1982).
2. Kishimoto, K., Nakamura, M., Suzuki, H., et al. *Biochim. Biophys. Acta* **1300**, 56-62 (1996).
3. Pace-Asciak, C.R., Granström, E., Samuelsson, B. *J. Biol. Chem.* **258**, 6835-6840 (1983).
4. Nishiyama, M., Okamoto, H., Watanabe, T., et al. *Eur. J. Pharmacol.* **341**, 57-63 (1998).
5. Rao, G.N., Glasgow, W.C., Eling, T.E., et al. *J. Biol. Chem.* **271**, 27760-27764 (1996).
6. Piomelli, D., Volterra, A., Dale, N., et al. *Nature* **328**, 38-43 (1987).
7. Piomelli, D., Wang, J.K.T., Sihra, T.S., et al. *Proc. Natl. Acad. Sci. USA* **86**, 8550-8554 (1989).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 03/07/2024

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM