

PRODUCT INFORMATION

12(R)-HETE

Item No. 34560

CAS Registry No.: 82337-46-0

Formal Name: 12R-hydroxy-5Z,8Z,10E,14Z-eicosatetraenoic acid

Synonym: 12(R)-Hydroxyeicosatetraenoic Acid

MF: $C_{20}H_{32}O_3$

FW: 320.5

Purity: $\geq 98\%$

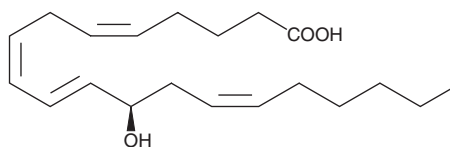
UV/Vis.: λ_{max} : 236 nm

Supplied as: A solution in ethanol

Storage: -20°C

Stability: ≥ 1 year

Special Conditions: Oxygen and light sensitive



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

Laboratory Procedures

12(R)-HETE 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 ethanol, DMSO and dimethyl formamide purged with an inert gas can be used. 12(R)-HETE is miscible in these solvents. The solubility of 12(R)-HETE in 0.1 M Na_2CO_3 is approximately 2 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 12(R)-HETE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 12(R)-HETE in PBS (pH 7.2) is approximately 0.8 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

12(R)-HETE is an endogenous active metabolite of the ω -6 PUFA and eicosanoid precursor arachidonic acid.^{1,2} It is formed from arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) by 12R-lipoxygenase (12R-LO), as well as cytochrome P450s (CYPs). 12(R)-HETE binds to the TP receptor in washed isolated human platelets ($\text{IC}_{50} = 0.734 \mu\text{M}$) and inhibits platelet aggregation induced by the TP receptor agonist I-BOP (Item No. 19600; $\text{IC}_{50} = 3.6 \mu\text{M}$).³ It also selectively binds to leukotriene B_4 (LTB_4) receptor 2 (BLT_2) over BLT_1 at 5 μM in CHO cell membranes expressing the human receptors.⁴ It increases the proliferation of HT-29 colon cancer cells when used at a concentration of 1 μM .⁵ 12(R)-HETE inhibits the bovine corneal Na^+/K^+ -ATPase in a concentration-dependent manner and decreases intraocular pressure in rabbits when administered topically at doses of 1, 10, or 50 $\mu\text{g}/\text{eye}$.^{6,7} Intracerebroventricular administration of 12(R)-HETE (10 $\mu\text{g}/\text{animal}$) decreases LPS-induced pyresis in rats.⁸

References

- Hawkins, D.J. and Brash, A.R. *J. Biol. Chem.* **262**(16), 7629-7634 (1987).
- Capdevila, J., Yadagiri, P., Manna, S., et al. *Biochem. Biophys. Res. Commun.* **141**(3), 1007-1011 (1986).
- Mais, D.E., Saussy, D.L., Jr., Magee, D.E., et al. *Eicosanoids* **3**(2), 121-124 (1990).
- Yokomizo, T., Kato, K., Hagiya, H., et al. *J. Biol. Chem.* **276**(15), 12454-12459 (2001).
- Bortuzzo, C., Hanif, R., Kashfi, K., et al. *Biochim. Biophys. Acta* **1300**(3), 240-246 (1996).
- Schwartzman, M.L., Balazy, M., Masferrer, J., et al. *Proc. Natl. Acad. Sci. USA* **84**(22), 8125-8129 (1987).
- Masferrer, J.L., Dunn, M.W., and Schwartzman, M.L. *Invest. Ophthalmol. Vis. Sci.* **31**(3), 535-539 (1990).
- Kozak, W., Kluger, M.J., Kozak, A., et al. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* **279**(2), R455-R460 (2000).

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.

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