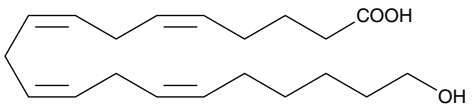
Product Information

20-HETE

Item No. 90030

CAS Registry No.: 79551-86-3
Formal Name: 20-hydroxy-5Z,8Z,11Z,14Z-eicosatetraenoic acid
Synonym: 20-hydroxy Arachidonic Acid
MF: $C_{20}H_{32}O_3$
FW: 320.5
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol
Misc.: Oxygen and light sensitive



Laboratory Procedures

For long term storage, we suggest that 20-HETE be stored as supplied at -20°C. It should be stable for at least one year.

20-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. 20-HETE 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 20-HETE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 20-HETE in PBS (pH 7.2) is at least 0.8 mg/ml. For greater aqueous solubility, 20-HETE 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.

20-HETE is a cytochrome P450 (CYP450) metabolite postulated to play an autacoid role in the renal and cerebral vasculature.[1] In rat cerebral microvessels, 20-HETE is a vasoconstrictor that mediates pressure-induced autoregulatory vasoconstriction.[2] 20-HETE is excreted mainly as the glucuronide conjugate. The concentration of free 20-HETE (20-40 pg/ml in human urine) is about 10-fold lower than the corresponding concentration of the 20-glucuronide.[3] 20-hydroxy Arachidonic acid can be further metabolized by cyclooxygenase to 20-hydroxy PGG_2 and 20-hydroxy PGH_2.[4]

References

1. McGiff, J.C. and Quilley, J. 20-HETE and the kidney: Resolution of old problems and new beginnings. *Am. J. Physiol.* **277,** R607-R623 (1999).
2. Gebremedhin, D., Lange, A.R., Lowry, T.F., *et al.* Production of 20-HETE and its role in autoregulation of cerebral blood flow. *Circ. Res.* **87,** 60-65 (2000).
3. Prakash, C., Zhang, J.Y., Falck, J.R., *et al.* 20-Hydroxyeicosatetraenoic acid is excreted as a glucuronide conjugate in human urine. *Biochem. Biophys. Res. Commun.* **185,** 728-733 (1992).
4. Schwartzman, M.L., Falck, J.R., Yadagiri, P., *et al.* Metabolism of 20-hydroxyeicosatetraenoic acid by cyclooxygenase. Formation and identification of novel endothelium-dependent vasoconstrictor metabolites. *J. Biol. Chem.* **264,** 11658-11662 (1989).

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