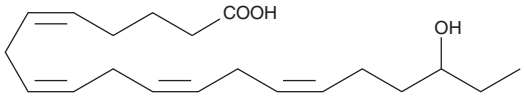
PRODUCT INFORMATION

(±)18-HETE

Item No. 10010638

CAS Registry No.: 133268-58-3
Formal Name: (±)18-hydroxy-5Z,8Z,11Z,14Z-eicosatetraenoic acid
Synonym: (±)18-Hydroxyeicosatetraenoic Acid
MF: $C_{20}H_{32}O_3$
FW: 320.5
Purity: ≥97%
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

(±)18-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. (±)18-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 (±)18-HETE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)18-HETE in PBS (pH 7.2) is approximately 0.8 mg/ml. For greater aqueous solubility, (±)18-HETE can be directly dissolved in 0.1 M Na_2CO_3 (solubility of 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

(±)18-HETE is the racemic version of a cytochrome P450 (CYP450) metabolite of arachidonic acid. When formed by the CYP2E1 isoform, 18-HETE is comprised 100% of the (R) isomer.[1] 18(R)-HETE dose-dependently stimulates vasodilation of the rabbit kidney, whereas 18(S)-HETE does not affect perfusion pressure.[2] 18-HETE has negligible effects on ATPase activity.[2] 18(R)-HETE at 1 µM completely blocks 20-HETE-induced vasoconstriction of renal arterioles.[3]

References

1. Laethem, R.M., Balazy, M., Falck, J.R., *et al.* Formation of 19(S)-, 19(R)-, and 18(R)-hydroxyeicosatetraenoic acids by alcohol-inducible cytochrome P450 2E1. *J. Biol. Chem.* **268(17)**, 12912-12918 (1993).
2. Carroll, M.A., Balazy, M., Margiotta, P., *et al.* Cytochrome P-450-dependent HETEs: Profile of biological activity and stimulation by vasoactive peptides. *Am. J. Physiol.* **271(4 Pt 2)**, R863-R869 (1996).
3. Zhang, F., Deng, H., Kemp, R., *et al.* Decreased levels of cytochrome P450 2E1-derived eicosanoids sensitize renal arteries to constrictor agonists in spontaneously hypertensive rats. *Hypertension* **45(1)**, 103-108 (2005).

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