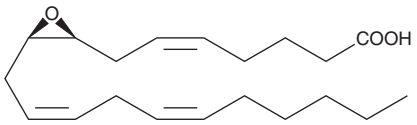
PRODUCT INFORMATION

(±)8(9)-EET

Item No. 50351

Formal Name: (±)8,9-epoxy-5Z,11Z,14Z-eicosatrienoic acid
Synonym: (±)8,9-EpETrE
MF: $C_{20}H_{32}O_3$
FW: 320.5
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



NOTE: Relative stereochemistry shown in chemical structure

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

Laboratory Procedures

(±)8(9)-EET 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 DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of (±)8(9)-EET in these solvents is approximately 50 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 (±)8(9)-EET is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)8(9)-EET in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(±)8(9)-EET is a fully racemic version of the R/S enantiomeric forms biosynthesized from arachidonic acid (Item No. 90010).[1,2] (±)8(9)-EET is a major cytochrome P450 (CYP450) metabolite in the renal cortex.[3] It activates PPARα in HEK293 cells when used at a concentration of 1 µM but inhibits NF-κB activity induced by IL-1β in a PPARα-dependent and -independent fashion.[4] It is also a substrate of COX-1 and COX-2, as measured by oxygen consumption and product formation assays when used at a concentration of 50 µM.[5] (8S,9R)-EET (1 µg/kg), but not (8R,9S)-EET, reduces the glomerular filtration rate (GFR) through COX-dependent pre-glomerular vasoconstriction in rats.[6]

References

1. Chacos, N., Falck, J.R., Wixtrom, C., *et al.* Novel epoxides formed during the liver cytochrome P-450 oxidation of arachidonic acid. *Biochem. Biophys. Res. Commun.* **104(3)**, 916-922 (1982).
2. Oliw, E.H., Guengerich, F.P., and Oates, J.A. Oxygenation of arachidonic acid by hepatic monooxygenases. Isolation and metabolism of four epoxide intermediates. *J. Biol. Chem.* **257(7)**, 3771-3781 (1982).
3. Zhang, J.Y., Prakash, C., Yamashita, K., *et al.* Regiospecific and enantioselective metabolism of 8,9-epoxyeicosatrienoic acid by cyclooxygenase. *Biochem. Biophys. Res. Commun.* **183(1)**, 138-143 (1992).
4. Bystrom, J., Wray, J.A., Sugden, M.C., *et al.* Endogenous epoxygenases are modulators of monocyte/macrophage activity. *PloS One* **6(10)**, e26591 (2011).
5. Rand, A.A., Barnych, B., Morisseau, C., *et al.* Cyclooxygenase-derived proangiogenic metabolites of epoxyeicosatrienoic acids. *Proc. Natl. Acad. Sci. USA* **114(17)**, 4370-4375 (2017).
6. Katoh, T., Takahashi, K., Capdevila, J., *et al.* Glomerular stereospecific synthesis and hemodynamic actions of 8,9-epoxyeicosatrienoic acid in rat kidney. *Am. J. Physiol.* **261(4 Pt 2)**, F578-F586 (1991).

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
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