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PRODUCT INFORMATION



(±)8(9)-EpETE

Item No. 10470

CAS Registry No.: 851378-93-3
Formal Name: (±)8,9-epoxy-5Z,11Z,14Z,17Z-
eicosatetraenoic acid

Synonyms: (±)8,9-EEQ, (±)8,9-epoxy
Eicosatetraenoic Acid

MF: C₂₀H₃₀O₃

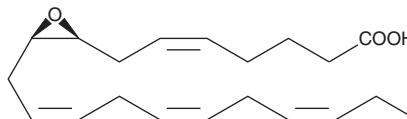
FW: 318.5

Purity: ≥95%

Supplied as: A solution in ethanol

Storage: -20°C

Stability: As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly



NOTE: Relative stereochemistry shown in chemical structure

Laboratory Procedures

(±)8(9)-EpETE 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)-EpETE 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)-EpETE is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of (±)8(9)-EpETE in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Eicosapentaenoic acid (EPA; Item No. 90110) is converted to epoxyeicosatetraenoic acids (EpETEs) by several cytochrome P450 isoforms.¹ The major product of this epoxygenase pathway, (±)17(18)-EpETE (Item No. 50861), relaxes vascular and airway smooth muscle by activating large conductance Ca²⁺-activated K⁺ (BK_{Ca}) channels by directly interacting with BK_α channel subunits.²⁻⁴ (±)8(9)-EpETE is an epoxygenase pathway product produced from EPA by CYP450 both *in vitro* and *in vivo*.⁵ The biological actions and physiological effects of this epoxide remain to be determined.

References

1. Barbosa-Sicard, E., Markovic, M., Honeck, H., *et al.* Eicosapentaenoic acid metabolism by cytochrome P450 enzymes of the CYP2C subfamily. *Biochem. Biophys. Res. Commun.* **329**, 1275-1281 (2005).
2. Lauterbach, B., Barbosa-Sicard, E., Wang, M.-H., *et al.* Cytochrome P450-dependent eicosapentaenoic acid metabolites are novel BK channel activators. *Hypertension* **39**, 609-613 (2002).
3. Hercule, H.C., Salanova, B., Essin, K., *et al.* The vasodilator 17,18-epoxyeicosatetraenoic acid targets the pore-forming BK_α channel subunit in rodents. *Exp. Physiol.* **92**(6), 1067-1076 (2007).
4. Morin, C., Sirois, M., Echave, V., *et al.* Relaxing effects of 17(18)-EpETE on arterial and airway smooth muscles in human lung. *Am. J. Physiol. Lung Cell Mol. Physiol.* **296**, L130-L139 (2009).
5. Arnold, C., Markovic, M., Blosssey, K., *et al.* Arachidonic acid-metabolizing cytochrome P450 enzymes are targets of ω-3 fatty acids. *J. Biol. Chem.* **285**, 32720-32733 (2010).

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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