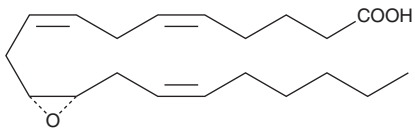
PRODUCT INFORMATION

11R(12S)-EET

Item No. 9004344

CAS Registry No.: 123931-38-4
Formal Name: 10-[(2R,3S)-3-(2Z)-2-octen-1-yl-2-oxiranyl]-5Z,8Z-decadienoic acid
Synonyms: 11R(12S)-EpETrE, 11R(12S)-Epoxy-all-*cis*-5,8,14-Eicosatrienoic Acid, 11R(12S)-Epoxyeicosatrienoic Acid, 11R(12S)-Epoxy-5(Z),8(Z),14(Z)-ETrE, FA 20:4;O
MF: $C_{20}H_{32}O_3$
FW: 320.5
Purity: ≥95%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥1 year



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

Laboratory Procedures

11R(12S)-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. 11R(12S)-EET is sparingly soluble (1-10 mg/ml) in acetonitrile, which should be purged with an inert gas.

Description

11R(12S)-EET is an oxylipin and a metabolite of arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607).[1,2] It is selectively formed from arachidonic acid by the cytochrome P450 (CYP) isoform CYP2C23 and CYP2C24 over CYP2B2, as well as CYP2C8 over CYP2C9. 11R(12S)-EET (50 nM) activates large-conductance calcium-activated potassium channels (K_{Ca}1.1/BK) in isolated rat coronary small arterial smooth muscle cells and binds to isolated guinea pig monocytes in a competitive binding assay using [^{3}H]14(15)-EET (K_i = 595.1 nM).[3,4] It inhibits the epithelial sodium channel (ENaC) in a patch-clamp assay using isolated rat cortical collecting duct tubules when used at a concentration of 100 nM.[5] 11R(12S)-EET induces dilation of precontracted isolated canine epicardial arterioles (EC_{50} = 6.3 pM) and denuded porcine subepicardial arterioles (EC_{50} = 1.6 pM).[3] It induces migration of human umbilical vein endothelial cells (HUVECs) when used at a concentration of 5 µM.[6]

References

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2. Daikh, B.E., Lasker, J.M., Raucy, J.L., *et al.* Regio- and stereoselective epoxidation of arachidonic acid by human cytochromes P450 2C8 and 2C91. *J. Pharmacol. Exp. Ther.* **271(3)**, 1427-1433 (1994).
3. Zhang, Y., Oltman, C.L., Lu, T., *et al.* EET homologs potently dilate coronary microvessels and activate BKCa channels. *Am. J. Physiol. Heart Circ. Physiol.* **280(6)**, H2430-H2440 (2001).
4. Wong, P.Y.-K., Lai, P.-S., and Falck, J.R. Mechanism and signal transduction of 14 (*R*), 15 (*S*)-epoxyeicosatrienoic acid (14,15-EET) binding in guinea pig monocytes. *Prostaglandins Other Lipid Mediat.* **62(4)**, 321-333 (2000).
5. Sun, P., Lin, D.H., Yue, P., *et al.* High potassium intake enhances the inhibitory effect of 11,12-EET on ENaC. *J. Am. Soc. Nephrol.* **21(10)**, 1667-1677 (2010).
6. Ding, Y., Frömel, T., Popp, R., *et al.* The biological actions of 11,12-epoxyeicosatrienoic acid in endothelial cells are specific to the R/S-enantiomer and require the Gs protein. *J. Pharmacol. Exp. Ther.* **350(1)**, 14-21 (2014).

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