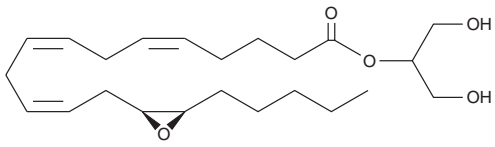
PRODUCT INFORMATION

(±)2-(14,15-Epoxyeicosatrienoyl) Glycerol

Item No. 10009962

CAS Registry No.: 848667-56-1
Formal Name: (5Z,8Z,11Z)-13-(3-pentyl-2-oxiranyl)-5,8,11-tridecatrienoic acid, (±)2-hydroxy-1-(hydroxymethyl)ethyl ester
Synonym: (±)2-14,15-EG
MF: $C_{23}H_{38}O_5$
FW: 394.5
Purity: ≥95%
Supplied as: A solution in acetonitrile
Storage: -80°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

(±)2-(14,15-Epoxyeicosatrienoyl) glycerol ((±)2-14,15-EG) is supplied as a solution in acetonitrile. While this product is soluble in other organic and aqueous solutions, please use with caution as removing the current solvent with nitrogen may cause migration of the glycerol. The solubility of (±)2-14,15-EG in ethanol is approximately 50 mg/ml and approximately 10 mg/ml in DMSO and DMF.

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. We do not recommend storing the aqueous solution for more than one day.

Description

2-Arachidonoyl glycerol (2-AG) is an endogenous central cannabinoid (CB_1) receptor agonist that is present at relatively high levels in the central nervous system.[1-3] 2-AG is hydrolyzed by the enzyme monoacylglycerol lipase, terminating its biological activity, and metabolism by cyclooxygenase-2 and lipoxygenases has been documented.[4,5] The related endocannabinoid, 2-arachidonoyl ethanolamide, can be metabolized by cytochrome P450 (CYP450) enzymes in human liver and kidney to a number of epoxy-ethanolamide derivatives.[6] (±)2-14,15-EG is a novel CYP450 metabolite of 2-AG in the kidney.[7] (±)2-14,15-EG is a potent mitogen for renal epithelial cells, increasing DNA synthesis in LLCPKcl4 cells at concentrations as low as 100 nM and doubling cell proliferation rates at 1 µM.[7] In these cells, (±)2-14,15-EG activates the metalloprotease ADAM17, which cleaves proTGF-α and releases TGF-α as a ligand that initiates the EGFR-ERK signalling pathway.

References

1. Stella, N., Schweitzer, P., and Piomelli, D. *Nature* **388**, 773-778 (1997).
2. Sugiura, T., Kodaka, T., Nakane, S., *et al. J. Biol. Chem.* **274**, 2794-2801 (1999).
3. Kondo, S., Kondo, H., Nakane, S., *et al. FEBS Lett.* **429**, 152-156 (1998).
4. Dinh, T.P., Carpenter, D., Leslie, F.M., *et al. Proc. Natl. Acad. Sci. USA* **99(16)**, 10819-10824 (2002).
5. Kozak, K.R. and Marnett, L.J. *Prostaglandins Leukot. Essent. Fatty Acids* **66(2&3)**, 211-220 (2002).
6. Snider, N.T., Kornilov, A.M., Kent, U.M., *et al. J. Pharmacol. Exp. Ther.* **321(2)**, 590-597 (2007).
7. Chen, J., Chen, J.-K., Falck, J.R., *et al. Mol. Cell. Biol.* **27(8)**, 3023-3034 (2007).

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