

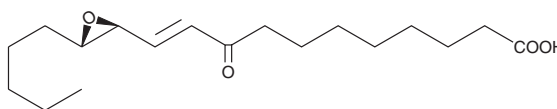
PRODUCT INFORMATION



trans-EKODE-(E)-Ib

Item No. 10004224

CAS Registry No.: 478931-82-7
Formal Name: 9-oxo-11-(3-pentyl-2-oxiranyl)-10E-undecenoic acid
Synonym: 12,13-epoxy-9-keto-10(*trans*)-Octadecenoic Acid
MF: C₁₈H₃₀O₄
FW: 310.4
Purity: ≥98%
UV/Vis.: λ_{max}: 233 nm
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥1 year



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

trans-EKODE-(E)-Ib 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 *trans*-EKODE-(E)-Ib 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. The solubility of *trans*-EKODE-(E)-Ib in PBS, pH 7.2, is approximately 0.5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

During oxidative stress, the abundant unsaturated fatty acid linoleic acid undergoes lipid peroxidation to produce α,β-unsaturated epoxy-keto-octadecenoic acids (EKODEs). Nonenzymatic autooxidation of linoleic acid generates six major EKODE isomers, which differ from one another in the positioning and the orientation of the epoxy group relative to the keto moiety.¹ *trans*-EKODE-(E)-Ib is a biologically active peroxidation product of linoleic acid that is characterized, structurally, by having a *trans* carbon-carbon double bond between the 9-keto and 12,13-epoxy groups. It activates an antioxidant response element (ARE) in neuronal cells and induces the expression of ARE-regulated cytoprotective genes like NQO1.² This EKODE also stimulates the synthesis of aldosterone and corticosterone in adrenal cells when supplied at 1-5 μM.^{3,4} This effect appears to be mediated by a rise in intracellular calcium.⁵

References

1. Lin, D., Zhang, J., and Sayre, L.M. *J. Org. Chem.* **72**, 9471-9480 (2007).
2. Wang, R., Kern, J.T., Goodfriend, T.L., et al. *Prostaglandins Leukot. Essent. Fatty Acids* **81**, 53-59 (2009).
3. Goodfriend, T.L., Ball, D.L., Raff, H., et al. *Endocrine Research* **28(4)**, 325-330 (2002).
4. Goodfriend, T.L., Ball, D.L., Egan, B.M., et al. *Hypertension* **43**[part 2], 358-363 (2004).
5. Payet, M.D., Goodfriend, T.L., Bilodeau, L., et al. *Am. J. Physiol. Endocrinol. Metab.* **291**, E1160-E1167 (2006).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM