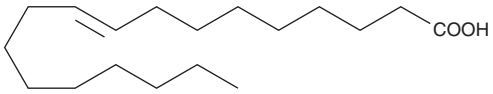
PRODUCT INFORMATION

Elaidic Acid

Item No. 90250

CAS Registry No.: 112-79-8
Formal Name: 9E-octadecenoic acid
Synonyms: 9(E)-Oleic Acid, *trans*-Oleic Acid
MF: $C_{18}H_{34}O_2$
FW: 282.5
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Elaidic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the elaidic acid in the solvent of choice. Elaidic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of elaidic acid in these solvents is approximately 100 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. Organic solvent-free aqueous solutions of elaidic acid can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of elaidic acid in 0.15 M Tris-HCl buffer (pH 8.5) is approximately 1 mg/ml. Store aqueous solutions of elaidic acid on ice and use within 12 hours of preparation. Although the aqueous solutions of elaidic acid may be stable for more than 12 hours, we strongly recommend using a fresh preparation each day.

Description

Elaidic acid is a monounsaturated *trans* fatty acid and the 9-*trans* isomer of oleic acid (Item Nos. 90260 | 24659) that has been found in partially hydrogenated cooking oils.[1] It reduces HHT and HETE formation and increases synthesis of prostaglandin E_2 (PGE_2; Item No. 14010), $PGF_2\alpha$ (Item Nos. 16010 | 16020), PGD_2 (Item No. 12010), and thromboxane B_2 (TXB_2; Item No. 19030) induced by arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) in isolated human platelets. Elaidic acid (0.1-5 mmol/L) induces apoptosis in human umbilical vein endothelial cells (HUVECs).[2] *In vivo*, elaidic acid (100 mg/kg) reduces cardiac and hepatic autophagy induced by palmitic acid (Item No. 10006627) in mice.[3]

Reference

1. Srivastava, K.C. and Awasthi, K.K. A comparative study on the effect of *cis* (oleic, linoleic) and *trans* (elaidic, linoelaidic) fatty acids on the *in vitro* prostaglandin biosynthesis in human blood platelets from (1-^{14}C) arachidonic acid. *Prostaglandins Leukot. Med.* **9,** 669-684 (1982).
2. Zapolska-Downar, D., Kośmider, A., and Naruszewicz, M. Trans fatty acids induce apoptosis in human endothelial cells. *J. Physiol. Pharmacol.* **56(4)**, 611-625 (2005).
3. Sauvat, A., Chen, G., Müller, K., *et al.* Trans-fats inhibit autophagy induced by saturated fatty acids. *EBioMedicine* **30**, 261-272 (2018).

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