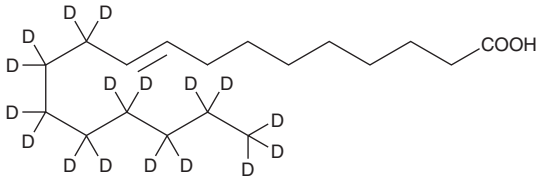
PRODUCT INFORMATION

Elaidic Acid-d_{17}

Item No. 27715

Formal Name:	(E)-octadec-9-enoic-11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-d_{17} acid
Synonyms:	C18:1(9E)-d_{17}, 9(E)-Oleic Acid-d_{17}, *trans*-Oleic Acid-d_{17}
MF:	$C_{18}H_{17}D_{17}O_2$
FW:	299.6
Chemical Purity:	≥98% (Elaidic Acid)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{17}); ≤1% d_0
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-d_{17} is intended for use as an internal standard for the quantification of elaidic acid (Item No. 90250) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Elaidic acid-d_{17} is supplied as a crystalline solid. A stock solution may be made by dissolving the elaidic acid-d_{17} in the solvent of choice, which should be purged with an inert gas. Elaidic acid-d_{17} is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of elaidic acid-d_{17} in these solvents is approximately 30 mg/ml.

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]

References

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(6)**, 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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