

# PRODUCT INFORMATION



## Elaidic Acid-d<sub>17</sub>

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<sub>17</sub> acid

**Synonyms:** C18:1(9E)-d<sub>17</sub>, 9(E)-Oleic Acid-d<sub>17</sub>, trans-Oleic Acid-d<sub>17</sub>

**MF:** C<sub>18</sub>H<sub>17</sub>D<sub>17</sub>O<sub>2</sub>

**FW:** 299.6

**Chemical Purity:** ≥98% (Elaidic Acid)

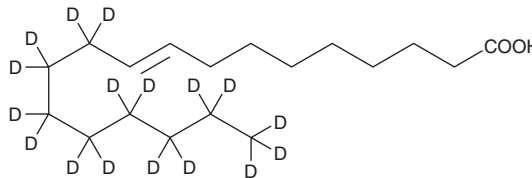
**Deuterium**

**Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>17</sub>); ≤1% d<sub>0</sub>

**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<sub>17</sub> 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<sub>17</sub> is supplied as a crystalline solid. A stock solution may be made by dissolving the elaidic acid-d<sub>17</sub> in the solvent of choice, which should be purged with an inert gas. Elaidic acid-d<sub>17</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of elaidic acid-d<sub>17</sub> 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.<sup>1</sup> It reduces HHT and HETE formation and increases synthesis of prostaglandin E<sub>2</sub> (PGE<sub>2</sub>; Item No. 14010), PGF<sub>2α</sub> (Item Nos. 16010 | 16020), PGD<sub>2</sub> (Item No. 12010), and thromboxane B<sub>2</sub> (TXB<sub>2</sub>; 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).<sup>2</sup> *In vivo*, elaidic acid (100 mg/kg) reduces cardiac and hepatic autophagy induced by palmitic acid (Item No. 10006627) in mice.<sup>3</sup>

### 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-<sup>14</sup>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).

#### 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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