

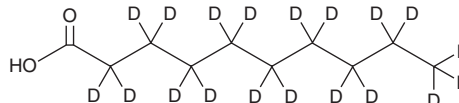
# PRODUCT INFORMATION



## Decanoic Acid-d<sub>19</sub>

Item No. 28871

**CAS Registry No.:** 88170-22-3  
**Formal Name:** decanoic-d<sub>19</sub> acid  
**Synonyms:** Capric Acid-d<sub>19</sub>, Decylic Acid-d<sub>19</sub>, FA 10:0-d<sub>19</sub>  
**MF:** C<sub>10</sub>HD<sub>19</sub>O<sub>2</sub>  
**FW:** 191.4  
**Chemical Purity:** ≥95% (Decanoic Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>19</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** An oil  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Decanoic acid-d<sub>19</sub> is intended for use as an internal standard for the quantification of decanoic acid (Item No. 20838) 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).

Decanoic acid-d<sub>19</sub> is supplied as an oil. A stock solution may be made by dissolving the decanoic acid-d<sub>19</sub> in the solvent of choice, which should be purged with an inert gas. Decanoic acid-d<sub>19</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of decanoic acid-d<sub>19</sub> in ethanol and DMF is approximately 25 mg/ml and approximately 10 mg/ml in DMSO.

### Description

Decanoic acid is a medium-chain saturated fatty acid. It is a non-competitive antagonist at AMPA receptors that selectively reduces glutamate-induced currents in *Xenopus* oocytes expressing GluA2 and GluA3 subunit-containing AMPA receptors (IC<sub>50</sub> = 0.52 mM) over those expressing GluA1 (IC<sub>50</sub> = 2.09 mM) or GluA1 and GluA2 subunits (IC<sub>50</sub> = 1.16 mM).<sup>1</sup> It inhibits epileptiform activity induced by pentylentetrazole (Item No. 18682) or low magnesium in rat hippocampal slices. Decanoic acid (1 mM) induces contractions in isolated guinea pig duodenum, an effect that can be blocked by the muscarinic acetylcholine receptor antagonist hyoscine, voltage-gated sodium channel inhibitor tetrodotoxin (Item Nos. 14964 | 14963), or M<sub>2</sub> muscarinic acetylcholine receptor antagonist hexamethonium (Item No. 25505).<sup>2</sup> It increases the escape threshold in an orofacial mechanical stimulation test in rats when administered at a topical dose of 30% in ointment form, indicating analgesic activity.<sup>3</sup> This effect can be blocked by the muscarinic acetylcholine receptor antagonist methoctramine (Item No. 24317). Plasma levels of decanoic acid are increased in patients with colorectal cancer when compared to patients with breast cancer or ulcerative colitis or without cancer.<sup>4</sup>

### References

1. Chang, P., Augustin, K., Boddum, K., *et al.* *Brain* **139**(Pt 2), 431-443 (2016).
2. Gwynne, R.M., Thomas, E.A., Goh, S.M., *et al.* *J. Physiol.* **556**(Pt 2), 557-569 (2004).
3. Noguchi, Y., Matsuzawa, N., Akama, Y., *et al.* *Mol. Pain* **13**, 1-11 (2017).
4. Crotti, S., Agnoletto, E., Cancemi, G., *et al.* *Anal. Bioanal. Chem.* **408**(23), 6321-6328 (2016).

#### 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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