

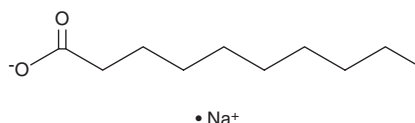
# PRODUCT INFORMATION



## Decanoic Acid (sodium salt)

Item No. 20838

**CAS Registry No.:** 1002-62-6  
**Formal Name:** decanoic acid, monosodium salt  
**Synonyms:** C10:0, Capric Acid, Decylic Acid, FA 10:0  
**MF:** C<sub>10</sub>H<sub>19</sub>O<sub>2</sub> • Na  
**FW:** 194.2  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** Room temperature  
**Stability:** ≥4 years



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

### Laboratory Procedures

Decanoic acid (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the decanoic acid (sodium salt) in the solvent of choice, which should be purged with an inert gas. Decanoic acid (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of decanoic acid (sodium salt) in ethanol is approximately 30 mg/ml and approximately 5 mg/ml in DMSO and DMF.

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 decanoic acid (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of decanoic acid (sodium salt) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### 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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