



Product Information

Sodium decanoate

Product Number **C 4151**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{10}H_{19}O_2Na$
Molecular Weight: 194.2
CAS Number: 1002-62-6
Synonyms: n-decanoic acid sodium salt, capric acid sodium salt, sodium caprate

Sodium decanoate, or sodium caprate, is the sodium salt of caproic acid, a 10-carbon saturated fatty acid. It has amphiphilic character and can form micelles and liquid crystalline phases in aqueous solution. In a chemical model system, sodium caprate has been used in ^{13}C NMR studies of the addition of hydrophilic and hydrophobic molecules to the 1-monooleoyl glycerol/water system, to elucidate the transport of biologically active molecules.^{1,2}

The amphiphilic character of sodium caprate has allowed for its use as an agent for transport of molecules across cell membranes and the blood brain barrier.^{3,4} Tight junction proteins and paracellular pathways in Caco-2 and T84 cell lines have been studied with sodium caprate as a probe.⁵ It has also been utilized in gene transfer studies in cultured human airway epithelial cells.^{6,7}

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (100 mg/ml), yielding a clear, colorless solution.

References

1. Caboi, F., et al., Addition of hydrophilic and lipophilic compounds of biological relevance to the monoolein/water system. I. Phase behavior. *Chem. Phys. Lipids*, **109(1)**, 47-62 (2001).
2. Murgia, S., et al., Addition of hydrophilic and lipophilic compounds of biological relevance to the monoolein/water system II - ^{13}C NMR relaxation study. *Chem. Phys. Lipids*, **110(1)**, 11-17 (2001).
3. Anderberg, E. K., et al., Sodium caprate elicits dilatations in human intestinal tight junctions and enhances drug absorption by the paracellular route. *Pharm. Res.*, **10(6)**, 857-864 (1993).
4. Dimitrijevic, D., et al., Increased vigabatrin entry into the brain by polysorbate 80 and sodium caprate. *J. Pharm. Pharmacol.*, **53(2)**, 149-154 (2001).
5. Watson, C. J., et al., Functional modeling of tight junctions in intestinal cell monolayers using polyethylene glycol oligomers. *Am. J. Physiol. Cell Physiol.*, **281(2)**, C388-397 (2001).
6. Coyne, C. B., et al., Enhanced epithelial gene transfer by modulation of tight junctions with sodium caprate. *Am. J. Respir. Cell. Mol. Biol.*, **23(5)**, 602-609 (2000).
7. Gregory, L. G., et al., Enhancement of adenovirus-mediated gene transfer to the airways by DEAE dextran and sodium caprate *in vivo*. *Mol. Ther.*, **7(1)**, 19-26 (2003).

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