

Product Data Sheet

Product Name: Decanoic Acid-d2

Cat. No.: GC46127

Chemical Properties

Cas. No. 62716-49-8

SMILES CCCCCCCCC([2H])([2H])C(O)=O

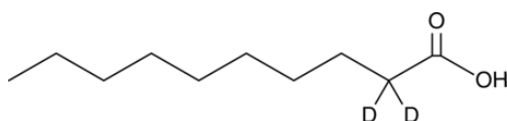
Formula C10H18D2O2 M.Wt 174.3

Solubility DMF: 25 mg/ml, DMF:PBS (pH 7.2) (1:1): 0.25 mg/ml, DMSO: 10 mg/ml, Ethanol: 25 mg/ml
Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure



Background

Decanoic acid-d2 is intended for use as an internal standard for the quantification of decanoic acid by GC- or LC-MS. 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 ($IC_{50} = 0.52$ mM) over those expressing GluA1 ($IC_{50} = 2.09$ mM) or GluA1 and GluA2 subunits ($IC_{50} = 1.16$ mM).¹ It inhibits epileptiform activity induced by pentylenetetrazole 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, or M2 muscarinic acetylcholine receptor antagonist hexamethonium.² 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.³ This effect can be blocked by the muscarinic acetylcholine receptor antagonist methoctramine. Plasma levels of decanoic acid are increased in patients with colorectal cancer when compared to patients with breast

Caution: Product has not been fully validated for medical applications. For research use only.

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cancer or ulcerative colitis or without cancer.⁴

[1. Chang, P., Augustin, K., Boddum, K., et al. Seizure control by decanoic acid through direct AMPA receptor inhibition. *Brain* 139(Pt 2), 431-443 (2016).|2. Gwynne, R.M., Thomas, E.A., Goh, S.M., et al. Segmentation induced by intraluminal fatty acid in isolated guinea-pig duodenum and jejunum. *J. Physiol.* 556(Pt 2), 557-569 (2004).|3. Noguchi, Y., Matsuzawa, N., Akama, Y., et al. Dietary constituent, decanoic acid suppresses the excitability of nociceptive trigeminal neuronal activity associated with hypoalgesia via muscarinic M2 receptor signaling. *Mol. Pain* 13, 1-11 (2017).|4. Crotti, S., Agnoletto, E., Cancemi, G., et al. Altered plasma levels of decanoic acid in colorectal cancer as a new diagnostic biomarker. *Anal. Bioanal. Chem.* 408(23), 6321-6328 (2016).

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