

Product Data Sheet

Product Name: Docosanoic Acid-d4

Cat. No.: GC47254

Chemical Properties

Cas. No. 1208430-53-8

SMILES CCCCCCCCCCCCCCCC([2H])([2H])CC([2H])([2H])CC(O)=O

Formula C₂₂H₄₀D₄O₂ M.Wt 344.6

Solubility DMF: 3 mg/ml, DMF:PBS (pH 7.2): 0.5 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.



Background

Docosanoic acid-d₄ is intended for use as an internal standard for the quantification of docosanoic acid by GC- or LC-MS. Docosanoic acid is a long-chain saturated fatty acid. It has been found in peanut and *M. oleifera* seed oils.^{1,2} It inhibits the double-stranded DNA binding activity of p53 through a direct interaction with the DNA binding domain ($K_D = 12$ nM).³ Docosanoic acid inhibits rat DNA polymerase β and human DNA polymerase Λ activity in cell-free enzyme assays when used at a concentration of 100 μ M and inhibits human DNA topoisomerase I and II relaxation activity at a concentration of 25 μ M.⁴ Liver levels of docosanoic acid are reduced in rats fed a high-fat or a high-fat high-cholesterol diet but not a high-cholesterol diet.⁵ Formulations containing docosanoic acid have been used in hair conditioner and moisturizers.

1. Dean, L.L., and Sanders, T.H. Hexacosanoic acid and other very long-chain fatty acids in peanut seed oil. *Plant Genet. Resour.* 7(3):252-256 (2009).
2. Sánchez-Machado, D.I., López-Cervantes, J., NÚñez-Gastélum, J.A., et al. Effect of the refining process on *Moringa oleifera* seed oil quality. *Food*

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

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Chem.18753-57(2015) 3.Iijima, H., Kasai, N., Chiku, H., et al.The inhibitory action of long-chain fatty acids on the DNA binding activity of p53Lipids41(6)521-527(2006) 4.Yonezawa, Y., Hada, T., Uryu, K., et al.Inhibitory action of C22-fatty acids on DNA polymerases and DNA topoisomerasesInt. J. Mol. Med.18(4)583-588(2006) 5.Serviddio, G., Bellanti, F., Villani, R., et al.Effects of dietary fatty acids and cholesterol excess on liver injury: A lipidomic approachRedox Biol.9296-305(2016)

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