

PRODUCT DATA SHEET

Methyl 3-hydroxytetradecanoate

Catalog number: 1736

Common Name: 3-Hydroxy C14:0 methyl ester

Source: synthetic

Solubility: chloroform, methanol, ethyl ether

CAS number: 55682-83-2

Molecular Formula: C₁₅H₃₀O₃

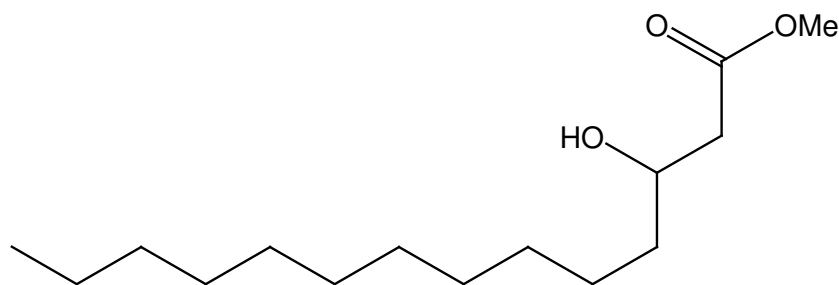
Molecular Weight: 258

Storage: -20°C

Purity: TLC >98%, GC >98%; identity confirmed by MS

TLC System: hexane/ethyl ether, (70:30)

Appearance: solid



Application Notes:

This methyl 3-hydroxytetradecanoate is a high purity standard that is useful for the investigation of disorders and diseases. Polyhydroxyalkenoates, polyesters produced by bacteria fermentation, are used for carbon and energy storage and are of interest in studies regarding their synthesis, properties and mechanisms. Medium chain-length polyhydroxyalkenoate monomers such as 3-hydroxytetradecanoic acid may have pharmaceutical properties. The biologically natural chiral (R)-3-hydroxytetradecanoic acid is an intermediate in fatty acid biosynthesis. 3-hydroxytetradecanoic acid has been shown to have critical functions in bacteria.¹ It has also been proposed as a measure for endotoxins from cotton lint and dust at high levels.² 3-hydroxy fatty acids are used as biomarkers for fatty acid oxidative disorders of both the long- and short-chain 3-hydroxyacyl-CoA dehydrogenases.^{3,4}

Selected References:

1. E. Rietschel et al. "Structural studies on the lipid A component of enterobacterial lipopolysaccharides by laser desorption mass spectrometry. Location of acyl groups at the lipid A backbone" *Eur J Biochem*, vol. 145 pp. 505-509, 1984
2. R. Berni et al. "3-Hydroxymyristic acid as a measure of endotoxin in cotton lint and dust" *Am Ind Hyg Assoc J*, vol. 49 pp. 81-88, 1988
3. P. Jones et al. "Improved Stable Isotope Dilution-Gas Chromatography-Mass Spectrometry Method for Serum or Plasma Free 3-Hydroxy-Fatty Acids and Its Utility for the Study of Disorders of Mitochondrial Fatty Acid *beta*-Oxidation" *Clinical Chemistry*, vol. 46, pp. 149-155, 2000
4. P. Jones et al. "Accumulation of free 3-hydroxy fatty acids in the culture media of fibroblasts from patients deficient in long-chain 1-3-hydroxyacyl-CoA dehydrogenase: a useful diagnostic aid" *Clinical Chemistry*, vol. 47(7) pp. 1190-1194, 2001

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