

PRODUCT DATA SHEET

3-Hydroxytetradecanoic acid

Catalog number: 1735

Common Name: 3-Hydroxy C14:0 acid

Source: synthetic

Solubility: chloroform, ethanol, methanol

CAS number: 3422-31-9

Molecular Formula: C₁₄H₂₈O₃

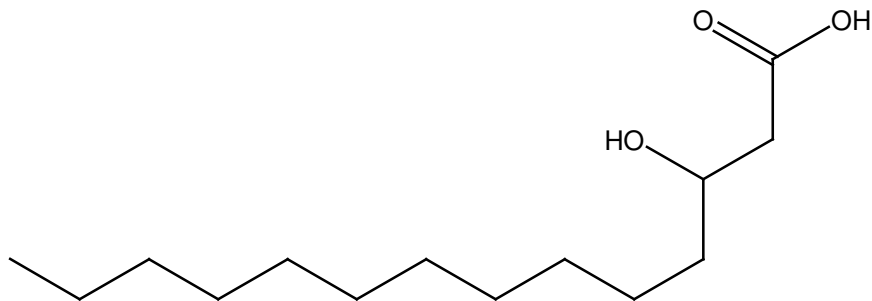
Molecular Weight: 244

Storage: -20°C

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

TLC System: hexane/ethyl ether/acetic acid, (70:30:2 by vol.)

Appearance: solid



Application Notes:

This 3-hydroxytetradecanoic acid is a high purity standard that is useful for the investigation of disorders and diseases. 3-Hydroxytetradecanoic acid is used as a biomarker for the molecular subunit endotoxin Lipid-A (where it is the most abundant saturated fatty acid) which is responsible for toxicity.¹ 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 some pharmaceutical properties. 3-hydroxy fatty acids are used as biomarkers for fatty acid oxidative disorders of both the long- and short-chain 3-hydroxy-acyl-CoA dehydrogenases.^{2,3}

Selected References:

1. D. Kirschner, S. Que Hee, and C. Clark "Method for detecting the 3-hydroxymyristic acid component of the endotoxins of gram-negative bacteria in compost samples" *Am Ind Hyg Assoc J*, vol. 46(12) pp. 741-746, 1985
2. 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
3. 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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