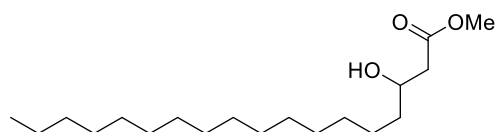


PRODUCT DATA SHEET

Methyl 3-hydroxyoctadecanoate

Catalog number:	1744	Molecular Weight:	315
Synonyms:	3-Hydroxy C18:0 methyl ester	Storage:	-20°C
Source:	synthetic	Purity:	TLC: >98%; GC: >98%; identity confirmed by MS
Solubility:	ethanol, methanol	TLC System:	hexane/ethyl ether (70:30)
CAS number:	2420-36-2	Appearance:	solid
Molecular Formula:	C ₁₉ H ₃₈ O ₃		



Application Notes:

This 3-hydroxyoctadecanoic acid methyl ester is a high purity standard that is ideal for analysis and biological systems. 3-Hydroxyoctadecanoic acid is found in many plants and animals as well as in bacteria and other organisms. One of the transformation products formed from stearoyl-CoA in rat liver is 3-hydroxyoctadecanoic acid and consists of both the L(+) and the D(-) enantiomers.¹ 3-Hydroxy fatty acids are intermediates in fatty acid biosynthesis and have been found to be converted to the *omega*-fatty acid by the enzyme CYP4F11 and then into dicarboxylic acids *in vivo*.² 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.³ Polyhydroxyalkenoates of 3-hydroxy fatty acids are polyesters produced by bacteria fermentation and are used for carbon and energy storage. These polyhydroxyalkenoates are of interest in studies regarding the synthesis, properties and mechanisms of bacteria. Short chain-length polyhydroxyalkenoate monomers such as 3-hydroxy fatty acids may have pharmaceutical properties.^{4,5}

Selected References:

1. M. Galli Kienle, et al. "Chirality of 3-hydroxyoctadecanoic acid from stearoyl-CoA by rat liver soluble enzymes" *Bioorganic Chemistry*, Vol. 4(1) pp. 64-71, 1975
2. M. Dhar et al. "*Omega*-oxidation of 3-hydroxy fatty acids by the human CYP4F gene subfamily enzyme CYP4F11" *Journal of Lipid Research*, vol. 49, pp. 612-624, 2008
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
4. J. Gangoiti et al. "Production of Chiral (*R*)-3-Hydroxyoctanoic Acid Monomers, Catalyzed by *Pseudomonas fluorescens* GK13 Poly(3-Hydroxyoctanoic Acid) Depolymerase" *Applied and Environmental Microbiology*, vol. 76 pp. 3554-3560, 2010
5. Z. Zheng et al. "Production of 3-hydroxydecanoic acid by recombinant *Escherichia coli* HB101 harboring phaG gene" *Antonie Van Leeuwenhoek*, vol. 85 pp. 93-101, 2004

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