

# PRODUCT DATA SHEET

## Methyl-3-hydroxytridecanoate

**Catalog number:** 1734

**Synonyms:** 3-Hydroxy C13:0 methyl ester

**Source:** synthetic

**Solubility:** chloroform, ethyl ether

**CAS number:** 150024-70-7

**Molecular Formula:** C<sub>14</sub>H<sub>28</sub>O<sub>3</sub>

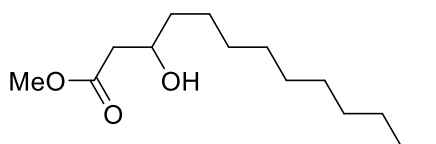
**Molecular Weight:** 244

**Storage:** -20°C

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

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

**Appearance:** solid



### Application Notes:

This 3-hydroxytridecanoic acid methyl ester is a high purity standard that is ideal for analysis and biological systems. 3-Hydroxytridecanoic acid is unusual in many biological systems and is therefore useful as an internal standard.<sup>1</sup> However 3-hydroxytridecanoic acid is a major constituent of some organisms such as in the anaerobic bacterium *Veillonella*.<sup>2</sup> 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*.<sup>3</sup> 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.<sup>4</sup> 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 and are used as biodegradable plastics.<sup>5</sup> Medium chain-length polyhydroxyalkenoate monomers may have pharmaceutical properties.

### Selected References:

1. L Larsson and A. Saraf "Use of gas chromatography-ion trap tandem mass spectrometry for the detection and characterization of microorganisms in complex samples" *Molecular Biotechnology*, vol. 7 pp. 279-287, 1997
2. D. Bishop et al. "Occurrence of 3-hydroxytridecanoic and 3-hydroxypentadecanoic acids in the lipopolysaccharides of *Veillonella*" *Biochimica et Biophysica Acta (BBA) - Lipids and Lipid Metabolism*, vol. 231 pp. 274-276, 1971
3. 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
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
5. 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

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