

PRODUCT DATA SHEET

3-Hydroxyundecanoic acid

Catalog number: 1729

Common names: 3-Hydroxy C11:0 fatty acid

Source: synthetic

Solubility: chloroform, ethanol, methanol

CAS number: 40165-88-6

Molecular Formula: C₁₁H₂₂O₃

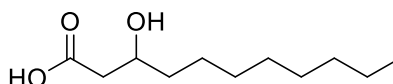
Molecular Weight: 202

Storage: -20°C

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

TLC System: hexane/ethyl ether/acetic acid (70:30:2)

Appearance: solid



Application Notes:

This 3-hydroxyundecanoic acid is a high purity standard that is ideal for analysis and biological systems. 3-Hydroxyundecanoic acid is unusual in many biological systems and is therefore useful as an internal standard.¹ However 3-hydroxyundecanoic acid is a major constituent of some organisms such as in *Idiomarina loihiensis* where it is concentrated in the membrane.² 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*.³ 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.⁴ 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.⁵ Medium chain-length polyhydroxyalkenoate monomers may have pharmaceutical properties.

Selected References:

1. H. Lind et al. "Antifungal compounds from cultures of dairy propionibacteria type strains" *FEMS Microbiology Letters*, vol. 271 pp. 310-315, 2007
2. S. Hou et al. "Genome sequence of the deep-sea *gamma*-proteobacterium *Idiomarina loihiensis* reveals amino acid fermentation as a source of carbon and energy" *PNAS*, vol. 101 pp. 18036-18041, 2004
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. Gangoti 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

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.