

PRODUCT DATA SHEET

3-Hydroxydecanoic acid

Catalog number: 1727

Common Name: 3-Hydroxy C10:0 acid

Source: synthetic

Solubility: chloroform, ethanol, methanol

CAS number: 14292-26-3

Molecular Formula: C₁₀H₂₀O₃

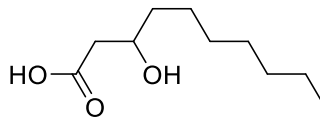
Molecular Weight: 188

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-hydroxydecanoic acid is a high purity standard that is useful for the investigation of disorders and diseases. Polyhydroxyalkanoates, polyesters produced by bacteria fermentation, such as from *Escherichia coli*, are used for carbon and energy storage and are of interest in studies regarding their synthesis, properties and mechanisms.¹ Short chain-length polyhydroxyalkanoate monomers such as 3-hydroxydecanoic acid may have pharmaceutical properties. 3-Hydroxydecanoic acid is the prevalent fatty acid in the rhamnolipid of *Pseudomonas aeruginosa*.² The biologically natural chiral (R)-3-hydroxydecanoic acid is an intermediate in fatty acid biosynthesis. 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.^{3,4}

Selected References:

1. 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
2. Q. Wang et al. "Engineering Bacteria for Production of Rhamnolipid as an Agent for Enhanced Oil Recovery" *Biotechnology and Bioengineering*, vol. 98 pp. 842-853, 2007
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 β -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

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.

DS1727 Rev. #5
December 22nd, 2021