

PRODUCT DATA SHEET

3-Hydroxynonanoic acid

Catalog number: 1725

Synonyms: 3-Hydroxy C9:0 fatty acid

Source: synthetic

Solubility: chloroform, ethanol, methanol

CAS number: 40165-87-5

Molecular Formula: C₉H₁₈O₃

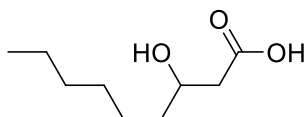
Molecular Weight: 174

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-hydroxynonanoic acid is a high purity standard that is useful for the investigation of disorders and diseases. 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*.¹ 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 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.³

Selected References:

1. 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
2. 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
3. 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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