PRODUCT DATA SHEET

2-Hydroxyoctadecanoic acid

Catalog number: 1707
Synonyms: 2-Hydroxy C18:0 fatty acid; alpha-Hydroxyoctadecanoic acid
Source: synthetic
Solubility: chloroform/methanol, 5:1
CAS number: 629-22-1

Molecular Formula: C_{18}H_{36}O_{3}
Molecular Weight: 300
Storage: -20°C
Purity: TLC: >98%, GC: >98%
TLC System: hexane/ethyl ether/acetic acid (70:30:2)
Appearance: solid

Application Notes:
This product is a high purity 2-hydroxy fatty acid that is ideal as a standard and for biological systems. 2-Hydroxy fatty acids are abundant in nervous tissues and are components of cerebrosides and sulfatides, which are mostly found in the myelin of nervous tissues. They are common in cosmetics, skin creams, and lotions. 2-hydroxy acids display complex monolayer phase behavior due to the additional hydrogen bonding afforded by the presence of the second hydroxy group and therefore play an important role in the membrane structure. 2-Hydroxy fatty acids are formed from the oxidation of fatty acids by the enzyme fatty acid 2-hydroxylase. This enzyme is also responsible for the formation of 2-hydroxy galactolipids in the peripheral nervous system. 2-hydroxy fatty acids are a putative category of root exudate signal perceived by Gigaspora species, stimulating an increase in elongated lateral branches. alpha-Oxidation of 2-hydroxy fatty acids to CO₂ and saturated acids occurs in the peroxisome and is unique from the alpha-oxidation of beta-carbon branched fatty acids such as phytanic acid. Cells from Zellweger syndrome and peroxisome-deficient cells are unable to undergo alpha-oxidation of these 2-hydroxy acids although patients with other peroxisomal disorders such as X-linked adrenoleukodystrophy, Refsum disease, and rhizomelic chondrodysplasia punctata are able. Fumonisin B1, a sphingolipid-like toxin found in molds, enhances the accumulation of sphingolipids and 2-hydroxy fatty acids while decreasing the amount of trihydroxy fatty acids.

Selected References:

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