

PRODUCT DATA SHEET

Methyl 2-hydroxytetracosanoate

Catalog number: 1716

Common Name: Methyl 2-hydroxylignocerate;
2-Hydroxy C24:0 methyl ester

Source: synthetic

Solubility: chloroform, ethyl ether

CAS number: 2433-95-6

Molecular Formula: C₂₅H₅₀O₃

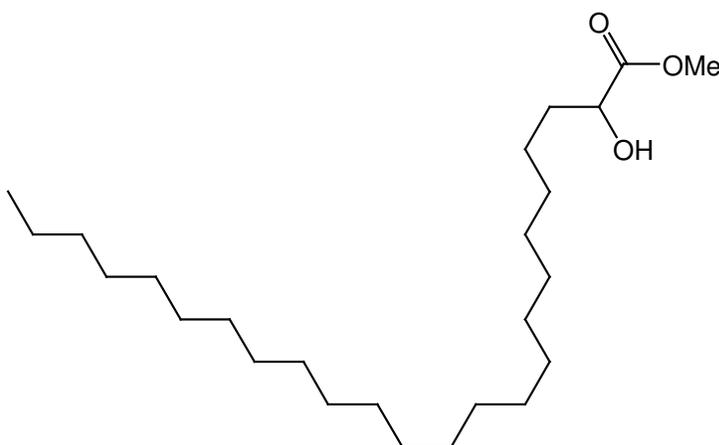
Molecular Weight: 399

Storage: -20°C

Purity: TLC >98%, GC >98%

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

Appearance: solid



Application Notes:

alpha-Hydroxy very long chain fatty acids are abundant in nervous tissues and are components of cerebrosides and sulfatides, which are mostly found in myelin of nervous tissues. 2-Hydroxytetracosanoic acid, which is unique to nervous tissues, is formed by the oxidation of tetracosanoic acid by the enzyme fatty acid 2-hydroxylase. This enzyme is also responsible for the formation of 2-hydroxy galactolipids in the peripheral nervous system.¹ *alpha*-Oxidation of 2-hydroxytetracosanoic acid to CO₂ and tricosanoic acid 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 although patients with other peroxisomal disorders such as X-linked adrenoleukodystrophy, Refsum disease, and rhizomelic chondrodysplasia punctata were able.² 2-Hydroxytetracosanoic acid is undergoing much research and various methods of analysis are being investigated.³

Selected References:

1. E. Maldonado et al. "FA2H is responsible for the formation of 2-hydroxy galactolipids in peripheral nervous system myelin" *Journal of Lipid Research*, Vol. 49 pp. 153-161, 2008
2. R. Sandhir, M. Khan, and I. Singh "Identification of the Pathway of α -Oxidation of Cerebronic Acid in Peroxisomes" *Lipids*, Vol. 35(10) pp. 1127-1133, 2000
3. N. Alderson, M. Walla, and H. Hama "A novel method for the measurement of in vitro fatty acid 2-hydroxylase activity by gas chromatography-mass spectrometry" *Journal of Lipid Research*, Vol. 46 pp. 1569-1579, 2005

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