

# 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:** C<sub>25</sub>H<sub>50</sub>O<sub>3</sub>

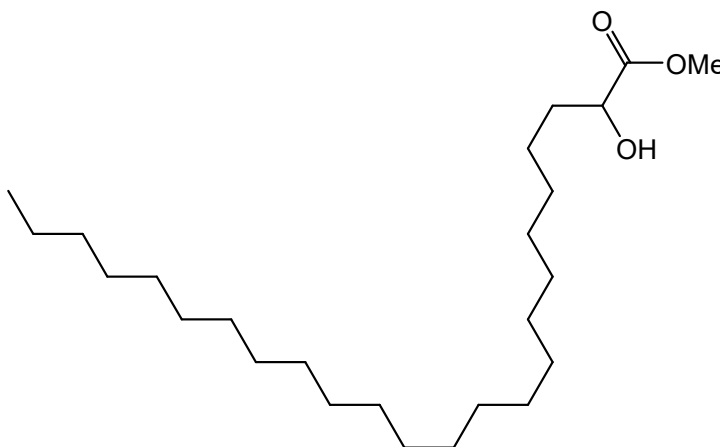
**Molecular Weight:** 399

**Storage:** -20°C

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

**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.<sup>1</sup> *alpha*-Oxidation of 2-hydroxytetracosanoic acid to CO<sub>2</sub> 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.<sup>2</sup> 2-Hydroxytetracosanoic acid is undergoing much research and various methods of analysis are being investigated.<sup>3</sup>

### 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  $\alpha$ -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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