

PRODUCT DATA SHEET

Methyl 2-hydroxytricosanoate

Catalog number: 1714

Common names: 2-Hydroxy C23:0 methyl ester

Source: synthetic

Solubility: chloroform, ethyl ether

CAS number: 118745-41-8

Molecular Formula: C₂₄H₄₈O₃

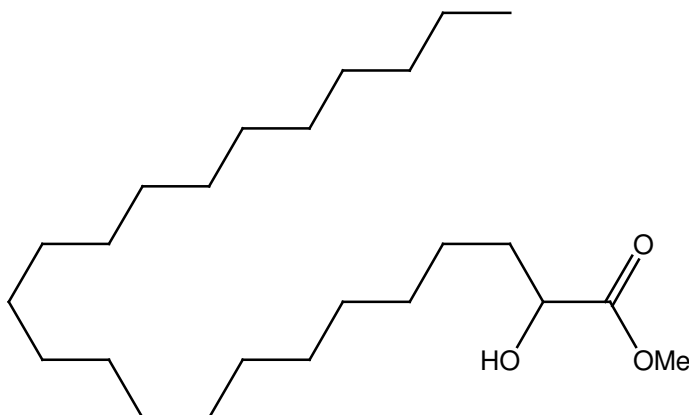
Molecular Weight: 385

Storage: -20°C

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

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

Appearance: solid



Application Notes:

2-Hydroxy very long chain fatty acids are abundant in nervous tissues and are components of cerebroside and sulfatides, which are mostly found in the myelin of nervous tissues. This *alpha*-hydroxy fatty acid contains an odd number of carbons and is much less prevalent than many other even-chain hydroxy fatty acids. It is therefore often useful as a standard or biomarker. 2-Hydroxytricosanoic acid has been reported in the marine sponge *Amphimedon compressa*.¹ 2-Hydroxy fatty acids are common in cosmetics and skin creams and lotions. They are formed by the oxidation of saturated 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 *alpha*-Oxidation of 2-hydroxy fatty acids to CO₂ and fatty 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 are able.³ 2-Hydroxy fatty acids are undergoing much research and various methods of analysis are being investigated.⁴

Selected References:

1. N. Carballeira and M. Lopez "On the isolation of 2-hydroxydocosanoic and 2-hydroxytricosanoic acids from the marine sponge *Amphimedon compressa*" *Lipids*, vol. 24 pp. 89-91, 1989
2. 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
3. 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
4. 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

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.