

PRODUCT DATA SHEET

Hexacosanoic acid

Catalog number: 1251

Common Name: C26:0 Fatty acid; cerotic acid

Source: synthetic

Solubility: chloroform, ethyl ether

CAS number: 506-46-7

Molecular Formula: C₂₆H₅₂O₂

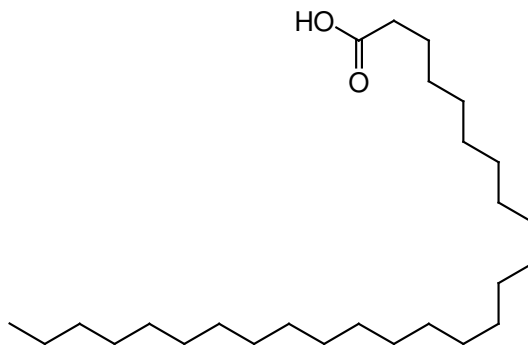
Molecular Weight: 397

Storage: room temperature

Purity: TLC: 99%, GC >99%

TLC System: hexane/ethyl ether/acetic acid
(85:15:1 by vol.)

Appearance: solid



Application Notes:

This high purity very long chain fatty acid (VLCFA) is ideal as a standard and for biological studies. X-linked adrenoleukodystrophy (X-ALD) is an inherited disorder of peroxisomal metabolism and is characterized by deficient β -oxidation of saturated very long chain fatty acids such as hexacosanoic acid. Indeed, some studies show hexacosanoic acid as the most prevalent VLCFA in X-ALD, causing oxidative damage of proteins early on in the disease.¹ Hexacosanoic acid has also been found to be closely linked to a high risk of atherosclerosis and metabolic syndrome.² In plants, VLCFA are converted to long chain hydrocarbons which are used to make waxes that are essential to their survival.³ VLCFA acylated to sphingolipids are critical in many biological functions⁴ and substantial amounts are found to be amide-linked to the long-chain sphingoid base sphinganine, forming a ceramide, which constitutes the lipid backbone of sphingomyelin and other sphingolipids. VLCFA can often be found in esterified linkages with cholesterol, gangliosides, galactocerebrosides, sphingomyelin, and phosphatidylcholine. In myelin, VLCFA are important in increasing the structural stability.

Selected References:

1. S. Fourcade et al. "Valproic acid induces antioxidant effects in X-linked adrenoleukodystrophy" *Human Molecular Genetics*, vol. 19 pp. 2005-2014, 2010
2. A. Kume et al. "High levels of saturated very long-chain fatty acid (hexacosanoic acid; C26:0) in whole blood are associated with metabolic syndrome in Japanese men" *Diabetes Research and Clinical Practice*, vol. 80 pp. 259-264, 2008
3. A. Millar et al. "CUT1, an Arabidopsis Gene Required for Cuticular Wax Biosynthesis and Pollen Fertility, Encodes a Very-Long-Chain Fatty Acid Condensing Enzyme" *Plant Cell*, Vol. 11 pp. 825-838, 1999
4. P. Tvrdika et al. "Role of a New Mammalian Gene Family in the Biosynthesis of Very Long Chain Fatty Acids and Sphingolipids" *Journal of Cell Biology*, Vol. 149(3) pp. 707, 2000

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