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Product Information



16-hydroxy Hexadecanoic Acid

Item No. 9000789

CAS Registry No.: 506-13-8

Formal Name: 16-hydroxy-hexadecanoic acid Synonyms: 16-Hydroxy Palmitic Acid, Juniperic

MF: $C_{16}H_{32}O_3$ FW: 272.4 **Purity:** ≥98%

Stability: ≥2 years at -20°C Supplied as: A crystalline solid

HOOC

Laboratory Procedures

For long term storage, we suggest that 16-hydroxy hexadecanoic acid be stored as supplied at -20°C. It should be stable for at least two years.

16-hydroxy Hexadecanoic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the 16-hydroxy hexadecanoic acid in the solvent of choice. 16-hydroxy Hexadecanoic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of 16-hydroxy hexadecanoic acid in ethanol is approximately 2.5 mg/ml and approximately 20 mg/ml in DMSO and DMF.

16-hydroxy Hexadecanoic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 16-hydroxy hexadecanoic acid should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. 16-hydroxy Hexadecanoic acid has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

16-hydroxy Hexadecanoic acid is a metabolite of the saturated fatty acid palmitic acid (16:0) that has been hydroxylated on its terminal (ω) carbon. It is produced by ω-hydroxylation of palmitic acid by cytochrome P450 in both plants and animals.¹⁻⁴ In plants, it is commonly a component of cutin.^{2,5}

References

- 1. Benveniste, I., Saito, T., Wang, Y., et al. Evolutionary relationship and substrate specificity of Arabidopsis thaliana fatty acid ω-hydroxylase. Plant Sci. 170, 326-8 (2006).
- 2. Li, H., Pinot, F., Sauveplane, V., et al. Cytochrome P450 family member CYP704B2 catalyzes the ω-hydroxylation of fatty acids and is required for anther cutin biosynthesis and pollen exine formation in rice. The Plant Cell 22(1), 173-190 (2010).
- 3. Roman, L.J., Palmer, C.N.A., Clark, J.E., et al. Expression of rabbit cytochromes P4504A which catalyze the ω-hydroxylation of arachidonic acid, fatty acid, and prostaglandins. Arch. Biochem. Biophys. 307(1), 57-65 (1993).
- 4. Aoyama, T., Hardwick, J.P., Imaoka, S., et al. Clofibrate-inducible rat hepatic P450s IVA1 and IVA3 catalyze the ωand $(\omega$ -1)-hydroxylation of fatty acids and the $(\omega$ -1)-hydroxylation of prostaglandins E_1 and $F_{2\alpha}$ J. Lipid Res. 31(8), 1477-82 (1990).
- 5. Peshel, S., Franke, R., Schreiber, L., et al. Composition of the cuticle of developing sweet cherry fruit. Phytochem. **68(7)**, 1017-25 (2007).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/9000789

WARNING: This product is for laboratory research only: not for administration to humans. Not for human or veterinary DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

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