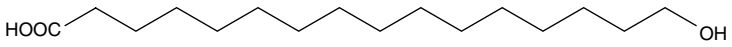
Product Information

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 Acid
MF: $C_{16}H_{32}O_3$
FW: 272.4
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



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 ω- and (ω-1)-hydroxylation of fatty acids and the (ω-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).

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