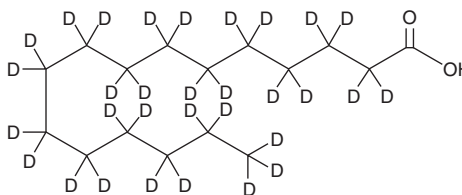


PRODUCT INFORMATION



Palmitic Acid-d₃₁ Item No. 16497

CAS Registry No.: 39756-30-4
Formal Name: hexadecanoic-2,2',3,3',4,4',5,5',6,6',7,7',
8,8',9,9',10,10',11,11',12,12',13,13',14,
14',15,15',16,16,16-d₃₁ acid
Synonyms: C16:0-d₃₁, Cetylic Acid-d₃₁, FA 16:0-d₃₁
Hexadecanoic Acid-d₃₁
MF: C₁₆HD₃₁O₂
FW: 287.6
Chemical Purity: ≥98% (Palmitic acid)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₃₁); ≤1% d₀
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Palmitic acid-d₃₁ is intended for use as an internal standard for the quantification of palmitic acid (Item No. 10006627) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Palmitic acid-d₃₁ is supplied as a crystalline solid. A stock solution may be made by dissolving the palmitic acid-d₃₁ in the solvent of choice, which should be purged with an inert gas. Palmitic acid-d₃₁ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of palmitic acid-d₃₁ in ethanol is approximately 30 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Description

Palmitic acid is a common 16-carbon saturated fat that represents 10-20% of human dietary fat intake and comprises approximately 25 and 65% of human total plasma lipids and saturated fatty acids, respectively.^{1,2} Acylation of palmitic acid to proteins facilitates anchoring of membrane-bound proteins to the lipid bilayer and trafficking of intracellular proteins, promotes protein-vesicle interactions, and regulates various G protein-coupled receptor functions.¹ Red blood cell palmitic acid levels are increased in patients with metabolic syndrome compared to patients without metabolic syndrome and are also increased in the plasma of patients with type 2 diabetes compared to individuals without diabetes.^{3,4}

References

1. Fatima, S., Hu, X., Gong, R.-H., *et al.* Palmitic acid is an intracellular signaling molecule involved in disease development. *Cell Mol. Life Sci.* **76(13)**, 2547-2557 (2019).
2. Santos, M.J., López-Jurado, M., Llopis, J., *et al.* Influence of dietary supplementation with fish oil on plasma fatty acid composition in coronary heart disease patients. *Ann. Nutr. Metab.* **39(1)**, 52-62 (1995).
3. Yi, L.-Z., He, J., Liang, Y.-Z., *et al.* Plasma fatty acid metabolic profiling and biomarkers of type 2 diabetes mellitus based on GC/MS and PLS-LDA. *FEBS J.* **580(30)**, 6837-6845 (2006).
4. Kabagambe, E.K., Tsai, M.Y., Hopkins, P.N., *et al.* Erythrocyte fatty acid composition and the metabolic syndrome: A national heart, lung, and blood institute GOLDN study. *Clin. Chem.* **54(1)**, 154-162 (2008).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM