

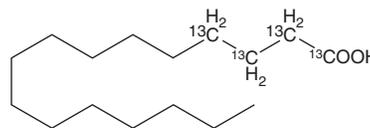
# PRODUCT INFORMATION



## Palmitic Acid-<sup>13</sup>C (C1, C2, C3, and C4 labeled)

Item No. 30550

**CAS Registry No.:** 287100-89-4  
**Formal Name:** Hexadecanoic-1,2,3,4-<sup>13</sup>C<sub>4</sub> acid  
**Synonyms:** C16:0-<sup>13</sup>C (C1, C2, C3, and C4 labeled),  
Cetylic Acid-<sup>13</sup>C (C1, C2, C3, and C4 labeled),  
FA 16:0-<sup>13</sup>C,  
Hexadecanoic Acid-<sup>13</sup>C (C1, C2, C3, and C4 labeled)  
**MF:** C<sub>12</sub>[<sup>13</sup>C]<sub>4</sub>H<sub>32</sub>O<sub>2</sub>  
**FW:** 260.4  
**Purity:** ≥98%  
**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-<sup>13</sup>C (C1, C2, C3, and C4 labeled) is supplied as a crystalline solid. A stock solution may be made by dissolving the palmitic acid-<sup>13</sup>C (C1, C2, C3, and C4 labeled) in the solvent of choice, which should be purged with an inert gas. Palmitic acid-<sup>13</sup>C (C1, C2, C3, and C4 labeled) is soluble in ethanol, DMSO, and dimethyl formamide. The solubility of palmitic acid-<sup>13</sup>C (C1, C2, C3, and C4 labeled) in these solvents is approximately 1, 10, and 15 mg/ml, respectively

### Description

Palmitic acid-<sup>13</sup>C (C1, C2, C3, and C4 labeled) is intended for use as an internal standard for the quantification of palmitic acid (Item No. 10006627) by GC- or LC-MS. 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.<sup>1,2</sup> 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.<sup>1</sup> 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.<sup>3,4</sup>

### 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.*

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 02/20/2024

#### 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