

PRODUCT INFORMATION



Palmitic Acid- $^{13}\text{C}_{16}$

Item No. 45789

CAS Registry No.: 56599-85-0

Formal Name: hexadecanoic-
1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16- $^{13}\text{C}_{16}$
acid

Synonyms: C16:0- $^{13}\text{C}_{16}$, Cetyllic Acid- $^{13}\text{C}_{16}$,
FA 16:0- $^{13}\text{C}_{16}$, Hexadecanoic Acid- $^{13}\text{C}_{16}$

MF: $[\text{C}^{13}]_{16}\text{H}_{32}\text{O}_2$

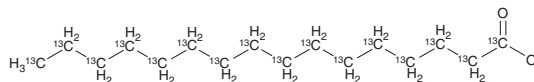
FW: 272.3

Purity: $\geq 98\%$

Supplied as: A 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- $^{13}\text{C}_{16}$ is supplied as a solid. A stock solution may be made by dissolving the palmitic acid- $^{13}\text{C}_{16}$ in the solvent of choice, which should be purged with an inert gas. Palmitic acid- $^{13}\text{C}_{16}$ is slightly soluble (0.1-1 mg/ml) in chloroform and ethanol.

Description

Palmitic acid- $^{13}\text{C}_{16}$ is intended for use as an internal standard for the quantification of palmitic acid (Item Nos. 10006627 | 43561) 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.^{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 Palmitic acid (200 μM) increases NF- κB p65 levels, matrix metalloproteinase-9 (MMP-9) activity, and production of reactive oxygen species (ROS) in AsPC-1 pancreatic cancer cells, as well as increases migration of AsPC-1 cells.³ It increases COX-2 levels in RAW 264.7 cells and increases LPS-induced IL-1 β levels and caspase-1 activity in isolated mouse peritoneal macrophages.^{4,5} Dietary administration of palmitic acid (2.2% w/w for 12 weeks) increases mouse hippocampal β -secretase 1 (BACE1) activity and amyloid β (1-42) (A β 42; Item No. 20574) levels.⁶ It also induces systolic contractile dysfunction in isolated mouse hearts.⁷ 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.^{8,9}

References

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5. Karasawa, T., Kawashima, A., Usui-Kawanishi, F., et al. *Arterioscler. Thromb. Vasc. Biol.* **38(4)**, 744-756 (2018).
6. Marwarha, G., Rostad, S., Lilek, J., et al. *J. Alzheimers Dis.* **57(3)**, 907-925 (2017).
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8. Yi, L.-Z., He, J., Liang, Y.-Z., et al. *FEBS Lett.* **580(30)**, 6837-6845 (2006).
9. Kabagambe, E.K., Tsai, M.Y., Hopkins, P.N., et al. *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.

WARRANTY AND LIMITATION OF REMEDY

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