

PRODUCT INFORMATION



Palmitic Acid-d₉ MaxSpec® Standard

Item No. 30355

CAS Registry No.: 1173022-49-5

Formal Name: hexadecanoic-
13,13,14,14,15,15,16,16,16-d₉ acid
Synonyms: C16:0-d₉, Cetylic Acid-d₉, FA 16:0-d₉,
Hexadecanoic Acid-d₉

MF: C₁₆H₂₃D₉O₂

FW: 265.5

Purity: ≥95%

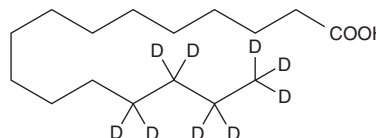
Supplied as: A solution in chloroform; in a deactivated glass ampule

Concentration: 100 µg/ml (nominal); see certificate of analysis for verified concentration

Storage: -20°C

Stability: ≥5 years; Stability testing is ongoing to ensure concentration accuracy. The certificate of analysis and product expiry date will be updated upon completion of testing.

Special Conditions: Store upright and unopened at -20°C. Warm to room temperature prior to opening. Light sensitive.



Description

Palmitic acid-d₉ 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.^{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}

Palmitic acid-d₉ MaxSpec® standard is a quantitative grade standard of palmitic acid (Item No. 30380) that has been prepared specifically for mass spectrometry or any application where quantitative reproducibility is required. The solution has been prepared gravimetrically and is supplied in a deactivated glass ampule sealed under argon. The concentration was verified by comparison to an independently prepared calibration standard. The verified concentration is provided on the certificate of analysis. This palmitic acid-d₉ MaxSpec® standard is guaranteed to meet identity, purity, stability, and concentration specifications and is provided with a batch-specific certificate of analysis. Ongoing stability testing is performed to ensure the concentration remains accurate throughout the shelf life of the product.

Note: The amount of solution added to the vial is in excess of the listed amount. Therefore, it is necessary to accurately measure volumes for preparation of calibration standards. Follow recommended storage and handling conditions to maintain product quality.

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 Lett.* **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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