

# PRODUCT INFORMATION



## Palmitic Acid MaxSpec® Standard

Item No. 30380

CAS Registry No.: 57-10-3

Formal Name: hexadecanoic acid

Synonyms: C16:0, Cetylic Acid, Hexadecanoic Acid, FA 16:0, NSC 5030

MF: C<sub>16</sub>H<sub>32</sub>O<sub>2</sub>

FW: 256.4

Purity: ≥95%

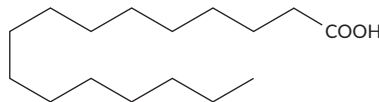
Supplied as: A solution in chloroform; in a deactivated glass ampule

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 is a long-chain saturated fatty acid that 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> 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.<sup>3</sup> It increases COX-2 levels in RAW 264.7 cells and increases LPS-induced IL-1β levels and caspase-1 activity in isolated mouse peritoneal macrophages.<sup>4,5</sup> 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) (Aβ42; Item No. 20574) levels.<sup>6</sup> It also induces systolic contractile dysfunction in isolated mouse hearts.<sup>7</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>8,9</sup>

Palmitic acid MaxSpec® standard is a quantitative grade standard of palmitic acid (Item No. 10006627) 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. This palmitic acid 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.

#### 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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## References

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9. 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).

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