

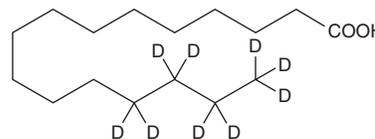
# PRODUCT INFORMATION



## Palmitic Acid-d<sub>9</sub>

Item No. 37061

**CAS Registry No.:** 1173022-49-5  
**Formal Name:** hexadecanoic-13,13,14,14,15,15,16,16,16-d<sub>9</sub> acid  
**Synonyms:** C16:0-d<sub>9</sub>, Cetylic Acid-d<sub>9</sub>, FA 16:0-d<sub>9</sub>, Hexadecanoic Acid-d<sub>9</sub>  
**MF:** C<sub>16</sub>H<sub>23</sub>D<sub>9</sub>O<sub>2</sub>  
**FW:** 265.5  
**Chemical Purity:** ≥98% (Palmitic Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>9</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

Palmitic acid-d<sub>9</sub> 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-d<sub>9</sub> is supplied as a crystalline solid. A stock solution may be made by dissolving the palmitic acid-d<sub>9</sub> in the solvent of choice, which should be purged with an inert gas. Palmitic acid-d<sub>9</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of palmitic acid-d<sub>9</sub> 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.<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>

#### 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.

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## References

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