

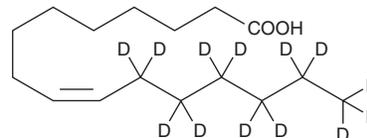
# PRODUCT INFORMATION



## Palmitoleic Acid-d<sub>13</sub>

Item No. 27714

**CAS Registry No.:** 2692623-92-8  
**Formal Name:** (9Z)-hexadecenoic-11,11,12,12,13,13,14,14,15,15,16,16,16-d<sub>13</sub> acid  
**Synonyms:** (9Z)-Hexadecenoic Acid-d<sub>13</sub>, C16:1(9Z)-d<sub>13</sub>, C16:1 n-7-d<sub>13</sub>, cis-Palmitoleic Acid-d<sub>13</sub>, FA 16:1-d<sub>13</sub>  
**MF:** C<sub>16</sub>H<sub>17</sub>D<sub>13</sub>O<sub>2</sub>  
**FW:** 267.5  
**Chemical Purity:** ≥98% (Palmitoleic Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>13</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A solution in ethanol  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

Palmitoleic acid-d<sub>13</sub> is intended for use as an internal standard for the quantification of palmitoleic acid (Item Nos. 10009871 | 21911) 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).

Palmitoleic acid-d<sub>13</sub> is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide, purged with an inert gas, can be used. The solubility of palmitoleic acid-d<sub>13</sub> in these solvents is approximately 30 mg/ml.

### Description

Palmitoleic acid is an ω-7 monounsaturated fatty acid that has been found in macadamia and sea buckthorn oils.<sup>1,2</sup> It increases basal and insulin-stimulated glucose uptake and glucose transporter 4 (Glut4) protein levels in 3T3-L1 adipocytes when used at a concentration of 200 μM.<sup>3</sup> *Ex vivo*, palmitoleic acid (300 mg/kg per day) increases glucose uptake and aerobic and anaerobic glycolysis and reduces *de novo* fatty acid synthesis and activity of the lipogenic enzymes ATP citrate lyase (ACL) and glucose-6-phosphate dehydrogenase (G6PDH) in isolated murine adipocytes. Dietary administration of palmitoleic acid (300 mg/kg) reduces high-fat diet-induced insulin resistance and liver inflammation in mice.<sup>4</sup>

### References

1. Yang, B. and Kallio, H.P. *J. Agric. Food Chem.* **49(4)**, 1939-1947 (2001).
2. Fard, A.M., Turner, A.G., and Willett, G.D. *Aus. J. Chem.* **56(5)**, 499-508 (2003).
3. Bolsoni-Lopes, A., Festuccia, W.T., Chimin, P., et al. *Lipids Health Dis.* **13(199)**, 1-10 (2014).
4. Souza, C.O., Teixeira, A.A.S., Lima, E.A., et al. *Mediators Inflamm.* **2014(582197)**, 1-12 (2014).

#### 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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