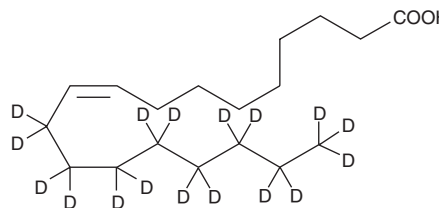


PRODUCT INFORMATION



Oleic Acid-d₁₇ Item No. 9000432

CAS Registry No.: 223487-44-3
Formal Name: 9Z-octadecenoic-11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,18-d₁₇ acid
Synonyms: C18:1(9Z)-d₁₇, FA 18:1-d₁₇, cis-9-Octadecenoic Acid-d₁₇, 9Z-Octadecenoic Acid-d₁₇
MF: C₁₈H₁₇D₁₇O₂
FW: 299.6
Chemical Purity: ≥95% (Oleic Acid)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₁₇); ≤1% d₀
Supplied as: A solution in methyl acetate
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Oleic acid-d₁₇ is intended for use as an internal standard for the quantification of oleic acid (Item No. 90260) 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).

Oleic acid-d₁₇ is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the methyl acetate under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of oleic acid-d₁₇ in these solvents is approximately 100 mg/ml.

Description

Oleic acid is a monounsaturated fatty acid and a major component of membrane phospholipids that has been found in human plasma, cell membranes, and adipose tissue.^{1,2} It contributes approximately 17% of the total fatty acids esterified to phosphatidylcholine, the major phospholipid class in porcine platelets.¹ Oleic acid inhibits collagen-stimulated platelet aggregation by approximately 90% when used at a concentration of 10 µg/ml. It also inhibits fMLF-induced neutrophil aggregation and degranulation by 55 and 68%, respectively, when used at a concentration of 5 µM, similar to arachidonic acid (Item No. 90010 | 90010.1 | 10006607).³ Oleic acid (60 µM) induces release of intracellular calcium in human platelets.⁴ *In vivo*, oleic acid increases TNF-α, IL-8, IL-6, and IL-1β production, neutrophil accumulation, and apoptotic and necrotic cell death in mouse lung and has been used to induce lung injury in a mouse model of acute respiratory distress syndrome (ARDS).²

References

1. Wahle, K.W. and Peacock, L.I. Effects of isomeric cis and trans eighteen carbon monounsaturated fatty acids on porcine platelet function. *Biochim. Biophys. Acta* **1301(1-2)**, 141-149 (1996).
2. Gonçalves-de-Albuquerque, C.F., Silva, A.R., Burth, P., *et al.* Acute respiratory distress syndrome: Role of oleic acid-triggered lung injury and inflammation. *Mediators Inflamm.* **260465**, (2015).
3. Naccache, P.H., Moiski, T.F., Volpi, M., *et al.* Modulation of rabbit neutrophil aggregation and degranulation by free fatty acids. *J. Leukoc. Biol.* **36(3)**, 333-340 (1984).
4. Siafaka-Kapadai, A., Hanahan, D.J., and Javors, M.A. Oleic acid-induced Ca²⁺ mobilization in human platelets: Is oleic acid an intracellular messenger? *J. Lipid Mediat. Cell Signal* **15(3)**, 215-232 (1997).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM