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# Produktinformation

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- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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- Expressversand

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# PRODUCT INFORMATION

**Cayman**
CHEMICAL

## Linoleic Acid-d$_{11}$
*Item No. 9002193*

| | |
|---|---|
| **Formal Name:** | 9Z,12Z-octadecadienoic-14,14',15,15',16,16',17,17',18,18,18-d11 acid |
| **Synonyms:** | Telfairic Acid-d$_{11}$, C18:2(9Z,12Z)-d$_{11}$, C18:2 *n*-6-d11, 9, 12-Octadecadienoic Acid-d$_{11}$ |
| **MF:** | C$_{18}$H$_{21}$D$_{11}$O$_2$ |
| **FW:** | 291.5 |
| **Chemical Purity:** | ≥98% (Linoleic Acid) |
| **Deuterium Incorporation:** | ≥99% deuterated forms (d$_1$-d$_{11}$); ≤1% d$_0$ |
| **Supplied as:** | A solution in methyl acetate |
| **Storage:** | -20°C |
| **Stability:** | ≥1 year |



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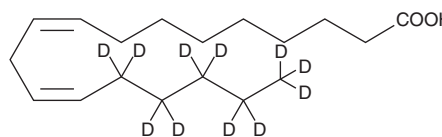
## Laboratory Procedures

Linoleic acid-d$_{11}$ is supplied as a solution in methyl acetate. To change the solvent, simply evaporate the linoleic acid-d$_{11}$ 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 linoleic acid-d$_{11}$ in these solvents is at least 100 mg/ml.

Linoleic acid-d$_{11}$ is used as an internal standard for the quantification of linoleic acid by stable isotope dilution 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).

## Description

Linoleic acid-d$_{11}$ is intended for use as an internal standard for the quantification of linoleic acid (Item Nos. 90150 | 90150.1 | 21909) by GC- or LC-MS. Linoleic acid is an essential ω-6 polyunsaturated fatty acid (PUFA).[1] It is the most abundant PUFA in a variety of foods, and dietary sources of linoleic acid include vegetable oils, meats, nuts, seeds, and eggs. Linoleic acid (30 µM) increases migration of IEC-6 rat intestinal epithelial cells in a wound healing assay.[2] Rats fed a linoleate-deficient diet exhibit decreased body weight and an increased ratio of eicosatrienoate to arachidonate in liver and serum phospholipids compared with rats fed a control diet, as well as mild scaling of forepaw skin.[3]

## References

1. Whelan, J., Fritsche, K. Linoleic acid. *Adv. Nutr*. **4(3)**, 311-312 (2013).
2. Ruthig, D.J., Meckling-Gill, K.A. Both (n-3) and (n-6) fatty acids stimulate wound healing in the rat intestinal epithelial cell line, IEC-6. *J. Nutr*. **129(10)**, 1791-1798 (1999).
3. Cunnane, S.C., Anderson, M.J. Pure linoleate deficiency in the rat: Influence on growth, accumulation of n-6 polyunsaturates, and [1-$^{14}$C]linoleate oxidation. *J. Lipid Res*. **38(4)**, 805-812 (1997).