

# PRODUCT INFORMATION



## $\alpha$ -Linolenic Acid ethyl ester-d<sub>5</sub> Item No. 28185

**CAS Registry No.:** 203633-16-3  
**Formal Name:** 9Z,12Z,15Z-octadecatrienoic-17,17,18,18,18-d<sub>5</sub> acid, ethyl ester  
**Synonyms:** ALAEE-d<sub>5</sub>, Ethyl  $\alpha$ -Linolenate-d<sub>5</sub>, Ethyl Linolenate-d<sub>5</sub>, LAEE-d<sub>5</sub>, Linolenic Acid ethyl ester-d<sub>5</sub>, SFE 20:3-d<sub>5</sub>

**MF:** C<sub>20</sub>H<sub>29</sub>D<sub>5</sub>O<sub>2</sub>  
**FW:** 311.5

**Chemical Purity:**  $\geq 98\%$  ( $\alpha$ -Linolenic Acid ethyl ester)

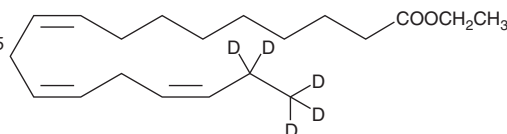
### Deuterium

**Incorporation:**  $\geq 99\%$  deuterated forms (d<sub>1</sub>-d<sub>5</sub>);  $\leq 1\%$  d<sub>0</sub>

**Supplied as:** A solution in ethanol

**Storage:** -20°C

**Stability:**  $\geq 2$  years



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

## Laboratory Procedures

$\alpha$ -Linolenic acid ethyl ester-d<sub>5</sub> is intended for use as an internal standard for the quantification of  $\alpha$ -linolenic acid ethyl ester (Item No. 10008199) 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).

## Description

$\alpha$ -Linolenic acid ethyl ester is an esterified form of  $\alpha$ -linolenic acid (Item Nos. 90210 | 21910). It increases cyclin E levels and the activity of Cdk2/cyclin E, ERK, and JNK in hepatic stellate cells when used at a concentration of 50  $\mu$ M.<sup>1</sup>  $\alpha$ -Linolenic acid ethyl ester (25  $\mu$ g/ml) inhibits the growth of *S. mutans*, *C. albicans*, and *P. gingivalis* by 98, 72, and 92%, respectively, *in vitro*.<sup>2</sup> It has been found in biodiesel produced from castor oil using ethanol.<sup>3</sup>  $\alpha$ -Linolenic acid ethyl ester has been used as a substrate in lipid peroxidation assays for antioxidant activity.<sup>4</sup>

## References

- Li, J., Hu, W., Baldassare, J.J., *et al.* The ethanol metabolite, linolenic acid ethyl ester, stimulates mitogen-activated protein kinase and cyclin signaling in hepatic stellate cells. *Life Sci.* **73(9)**, 1083-1096 (2003).
- Huang, C.B. and Ebersole, J.L. A novel bioactivity of omega-3 polyunsaturated fatty acids and their ester derivatives. *Mol. Oral Microbiol.* **25(1)**, 75-80 (2010).
- Conceição, M.M., Fernandes, V.J., Jr., Bezerra, A.F., *et al.* Dynamic kinetic calculation of castor oil biodiesel. *J. Therm. Anal. Calorim.* **87(3)**, 865-869 (2007).
- Miyake, T. and Shibamoto, T. Antioxidative activities of natural compounds found in plants. *J. Agric. Food Chem.* **45(5)**, 1819-1822 (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.

**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.

Copyright Cayman Chemical Company, 03/04/2024

## 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