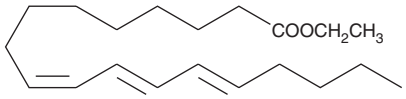
PRODUCT INFORMATION

9(Z),11(E),13(E)-Octadecatrienoic Acid ethyl ester

Item No. 10008350

CAS Registry No.:	42021-86-3
Formal Name:	ethyl (9Z,11E,13E)-octadeca-9,11,13-trienoate
Synonyms:	α-ESA ethyl ester, Ethyl α-eleostearate, SFE 20:3
MF:	$C_{20}H_{34}O_2$
FW:	306.5
Purity:	≥90%
UV/Vis.:	λ_{max}: 261, 270, 281 nm
Supplied as:	A solution in ethanol
Storage:	-80°C
Stability:	≥1 year



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

Laboratory Procedures

9(Z),11(E),13(E)-Octadecatrienoic acid ethyl ester (α-ESA ethyl ester) 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 ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of α-ESA ethyl ester in ethanol is approximately 100 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Description

α-ESA ethyl ester is a conjugated polyunsaturated fatty acid commonly found in plant seed oil. This fatty acid accounts for about 60% of the total fatty acid composition of bitter gourd seed oil and about 70% in tung oil.[1] α-ESA is metabolized and converted to conjugated linoleic acid (9Z,11E-CLA) in rats.[2] It has shown potential as a tumor growth suppressor. In colon cancer Caco-2 cells, α-ESA induced apoptosis through up-regulation of GADD45, p53, and PPARγ.[1] In DLD-1 cells supplemented with α-ESA, apoptosis was induced *via* lipid peroxidation with an EC_{50} of 20 µM.[2] It also inhibits DNA polymerases and topoisomerases with IC_{50}s ranging from ~5-20 µM for different isoforms of the enzymes.[3] α-ESA ethyl ester is a neutral, more lipid soluble form of the free acid.

References

1. Yasui, Y., Hosokawa, M., Sahara, T., *et al.* Bitter gourd seed fatty acid rich in 9c,11t,13t-conjugated linolenic acid induces apoptosis and up-regulates the GADD45, p53 and PPARγ in human colon cancer caco-2 cells. *Prostaglandins Leukot. Essent. Fatty Acids* **73(2)**, 113-119 (2005).
2. Tsuzuki, T., Tokuyama, Y., Igarashi, M., *et al.* Tumor growth suppression by a α-eleostearic acid, linolenic acid isomer with a conjugated triene system, via lipid peroxidation. *Carcinogenesis* **25(8)**, 1417-1425 (2004).
3. Mizushina, Y., Tsuzuki, T., Eitsuka, T., *et al.* Inhibitory action of conjugated C18-fatty acids on DNA polymerases and DNA topoisomerases. *Lipids* **39(10)**, 977-983 (2004).

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, 02/13/2024

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