

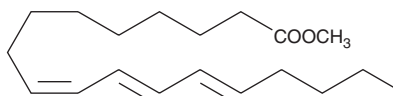
PRODUCT INFORMATION



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

Item No. 10008333

CAS Registry No.: 4175-47-7
Formal Name: 9Z,11E,13E-octadecatrienoic acid, methyl ester
Synonyms: α -ESA methyl ester, Methyl α -eleostearate, SFE 19:3
MF: C₁₉H₃₂O₂
FW: 292.5
Purity: \geq 98%
UV/Vis.: λ_{max} : 261, 270, 281 nm
Supplied as: A solution in ethanol
Storage: -80°C
Stability: \geq 2 years



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

Laboratory Procedures

α -ESA methyl 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 DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of α -ESA methyl ester in these solvents is approximately 30 mg/ml.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

α -ESA 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 melon 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 PPAR γ .¹ In DLD-1 cells supplemented with α -ESA, apoptosis was induced via lipid peroxidation with an EC₅₀ of 20 μ M.² It also inhibits DNA polymerases and topoisomerases with IC₅₀s ranging from ~5-20 μ M for different isoforms of the enzymes.³ α -ESA methyl ester is a neutral, more lipid soluble form of the free acid.

References

1. Yasui, Y., Hosokawa, M., Sahara, T., *et al.* Bitter melon seed fatty acid rich in 9c,11t,13t-conjugated linolenic acid induces apoptosis and up-regulates the GADD45, p53 and PPAR γ 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. Mizushima, 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.

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