

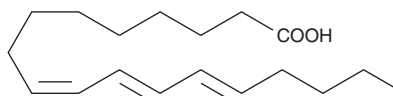
PRODUCT INFORMATION



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

Item No. 10008349

CAS Registry No.: 506-23-0
Formal Name: 9Z,11E,13E-octadecatrienoic acid
Synonyms: α -Eleostearic Acid, α -ESA, FA 18:3, LAF 237
MF: C₁₈H₃₀O₂
FW: 278.4
Purity: \geq 95%
UV/Vis.: λ_{max} : 270 nm
Supplied as: A solution in methanol
Storage: -20°C
Stability: \geq 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 (α -ESA) is supplied as a solution in methanol. To change the solvent, simply evaporate the methanol 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 α -ESA in these solvents is approximately 30 mg/ml.

α -ESA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of α -ESA should be diluted with the aqueous buffer of choice. α -ESA has a solubility of approximately 0.5 mg/ml in a 1:10 solution of ethanol:PBS (pH 7.2) using this method. 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

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* **75**, 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.

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