

PRODUCT DATA SHEET

Methyl *alpha*-eleostearate

Catalog No: 1233

Other Name: Methyl 9(Z),11(E),13(E)-
octadecatrienoate; *alpha*-
Eleostearic acid methyl ester;
Conjugated linolenic acid methyl
ester; CLnA

Source: natural, plant

Solubility: hexane, ethanol, methanol,
chloroform

CAS No: 4175-47-7

Mol. Formula: C₁₉H₃₂O₂

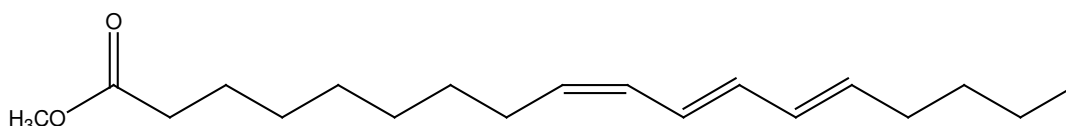
Mol. Weight: 293

Storage: -20°C

Purity: TLC, GC > 98%;
identity confirmed by MS

TLC System: Hexane/Ethyl ether
80:20 by vol.

Appearance: liquid



Application Notes:

alpha-Eleostearic acid is a conjugated linolenic acid (CLnA) that is found in high amounts in several natural oils, including tung oil. CLnAs contain 3 or 4 double bonds (which can be any combination of *cis* or *trans*) and predominantly 9,11,13- and 8,10,12-octadecatrienoic acid positional isomers. Research indicates that CLnAs possess strong antidiabetic, antiobesity, antiproliferative, and anticarcinogenic activities as well as a significant effect on lipid metabolism.⁽¹⁾ These physiological effects make CLnAs potential candidates as therapeutic agents, although more research is needed to verify previous findings.⁽²⁾ Some studies suggest that punicic acid and other CLnAs can reduce adipose tissue in mouse models, making it potentially useful as a weight-controlling lipid.⁽³⁾ CLnAs, including punicic, jacaric, and *alpha*-eleostearic acids, have been shown to suppress tumor cell growth through lipoperoxidation and apoptotic pathways and exhibit potent anti-inflammatory effects.^(4,5,6) In addition *alpha*-eleostearic acid has been shown to be significantly involved in the anti-adiposity function of mice.⁽⁷⁾

Selected References:

1. P. Aruna et al. Health Benefits of Punicic Acid: A Review. *Comprehensive Reviews in Food Science and Food Safety*. Vol. 15 pp. 16-27, 2016
2. I. Pereira et al. Pomegranate Seed Oil (Punica Granatum L.): A Source of Punicic Acid (Conjugated α -Linolenic Acid). *Journal of Human Nutrition and Food Science*. Vol. 2(1) pp. 1024, 2014
3. Koba et al. Genetically Modified Rapeseed Oil Containing *cis*-9, *trans*-11, *cis*-13-Octadecatrienoic Acid Affects Body Fat Mass and Lipid Metabolism in Mice. *J. Agric Food Chem*. Vol. 55(9) pp. 3741-3748, 2007
4. T. Tsuzuki et al. Tumor growth suppression by α -eleostearic acid, a linolenic acid isomer with a conjugated triene system, via lipid peroxidation. *Carcinogenesis*. Vol. 25(8) pp. 1417-1425, 2004
5. J. Gasmí and J. Sanderson. Jacaric acid and its octadecatrienoic acid geoisomers induce apoptosis selectively in cancerous human prostate cells: a mechanistic and 3-D structure-activity study. *Phytomedicine*. Vol. 20 pp. 734-742, 2013
6. Liu, W.N., and Leung, K.N. Jacaric acid inhibits the growth of murine macrophage-like leukemia PU5-1.8 cells by inducing cell cycle arrest and apoptosis. *Cancer Cell Int*. Vol. 15 pp. 90, 2015
7. G. Chen et al. The anti-adiposity effect of bitter melon seed oil is solely attributed to its fatty acid components. *Lipids Health Dis*. vol. 16(186) pp. 1-10, 2017

This product is to be used for research only. It is not intended for drug or diagnostic use, human consumption or to be used in food or food additives. Matreya assumes no liability for any use of this product by the end user. We believe the information, offered in good faith, is accurate.