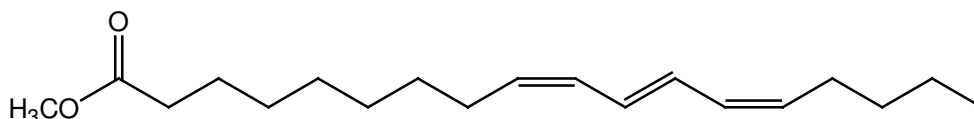


PRODUCT DATA SHEET

Methyl punicate

Catalog No:	1240	Mol. Formula:	C ₁₉ H ₃₂ O ₂
Other Name:	Methyl 9(Z),11(E),13(Z)- Octadecatrienoate; Conjugated linolenic acid methyl ester; CLnA	Mol. Weight:	292
Source:	natural, plant	Storage:	-20°C
Solubility:	hexane, ethanol, methanol, chloroform	Purity:	TLC, GC > 97%; identity confirmed by MS
CAS No:	N/A	TLC System:	Hexane/Ethyl ether 85:15 by vol.
		Appearance:	liquid



Application Notes:

Punicic acid is a conjugated linolenic acid (CLnA) that is found in high amounts in several natural oils, including pomegranate and snake guard seed oils. CLnAs contain 3 or 4 double bonds (which can be any combination of *cis* or *trans*) and 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 α -eleostearic acids, have been shown to suppress tumor cell growth through lipoperoxidation and apoptotic pathways.^(4,5) It has been found that some CLnAs, such as punicic acid and jacaric acid, exert a potent anti-inflammatory effect through the inhibition of TNF α -induced priming of ROS production and inhibition of cyclooxygenase 1 (COX-1).^(6,7) Punicic acid also modulates mucosal immune responses and ameliorates gut inflammation through PPAR γ and δ -dependent mechanisms.⁽⁸⁾ In addition, pomegranate oil has been demonstrated to inhibit estrogen receptors α and β , with both punicic acid and α -eleostearic acid being identified as active inhibitors.⁽⁹⁾

Selected References:

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7. Z. Mashhadi et al. Robust Inhibitory Effects of Conjugated Linolenic Acids on a Cyclooxygenase-related Linoleate 10S-Dioxygenase: Comparison with COX-1 and COX-2. *Biochim. Biophys. Acta*. Vol. 1851(10) pp. 1346-1352, 2015
8. J. Bassaganya-Riera et al. Punicic acid modulates mucosal immune responses and prevents gut inflammation through PPAR γ and δ -dependent mechanisms. *FASEB*. Vol. 24(1) pp. 926, 2010
9. H. Tran et al. Pomegranate (*punica granatum*) seed linolenic acid isomers: concentration-dependent modulation of estrogen receptor activity. *Endocr. Res*. Vol. 35(1) pp. 1-16, 2010

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