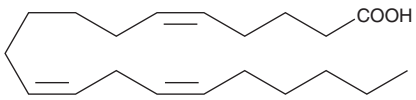
PRODUCT INFORMATION

5(Z),11(Z),14(Z)-Eicosatrienoic Acid

Item No. 10009999

CAS Registry No.: 7019-85-4
Formal Name: 5Z,11Z,14Z-eicosatrienoic acid
Synonyms: 5,11,14,20:3, FA 20:3, Sciadonic Acid
MF: $C_{20}H_{34}O_2$
FW: 306.5
Purity: ≥98%
Supplied as: A solution in ethanol
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

5(Z),11(Z),14(Z)-Eicosatrienoic acid 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 5(Z),11(Z),14(Z)-eicosatrienoic acid in these solvents is approximately 100 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. If an organic solvent-free solution of the 5(Z),11(Z),14(Z)-eicosatrienoic acid is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in agueous buffers. For greater aqueous solubility, 5(Z),11(Z),14(Z)-eicosatrienoic acid can be directly dissolved in 0.1 M Na_2CO_3 (solubility of 1.5 mg/ml) and then diluted with PBS (pH 7.2) to achive the desired concentration or pH. We do not recommend storing the aqueous solution for more than one day.

Description

5(Z),11(Z),14(Z)-Eicosatrienoic acid is a polyunsaturated fatty acid found in various natural sources including maritime pine (*Pinus pinaster*) seed oil (MPSO), gymnospermae leaves and seeds, and freshwater gastropods.[1-3] A diet containing MPSO lowered high-density lipoprotein and ApoA1 levels in transgenic mice expressing human ApoA1. MPSO was found to diminish cholesterol efflux *in vitro*.[1] 5(Z),11(Z),14(Z)-Eicosatrienoic acid methyl ester, when topically applied, reduces inflammatory processes, potentially by displacing arachidonic acid from phospholipid pools and reducing downstream inflammatory products such as prostaglandin E_2 and leukotrienes.[4]

References

1. Asset, G., Leroy, A., Bauge, E., *et al.* Effects of dietary maritime pine (*Pinus pinaster*)-seed oil on high-density lipoprotein levels and *in vitro* cholesterol efflux in mice expressing human apolipoprotein A-I. *Br. J. Nutr.* **84**, 353-360 (2000).
2. Mongrand, S., Badoc, A., Patouille, B., *et al.* Taxonomy of gymnospermae: Multivariate analyses of leaf fatty acid composition. *Phytochem.* **58**, 101-115 (2001).
3. Go, J.V., Rezanka, T., Srebnik, M., *et al.* Variability of fatty acid components of murine and freshwater gastropod speices from the littoral zone of the Red Sea, Mediterranean Sea, and Sea of Galilee. *Biochem. Syst. Ecol.* **30**, 819-835 (2002).
4. Berger, A., Monnard, I., Baur, M., *et al.* Epidermal anti-inflammatory properties of 5,11,14 20:3: Effects on mouse ear edema, PGE_2 levels in cultured keratinocytes, and PPAR activation. *Lipids Health Dis.* **1(5)**, 1-12 (2002).

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