

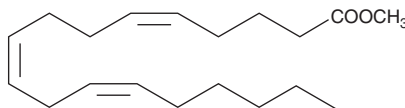
# Product Information



## Pinolenic Acid methyl ester

Catalog No. 10008656

**CAS Registry No.:** 38406-57-4  
**Formal Name:** 5Z,9Z,12Z-octadecatrienoic acid, methyl ester  
**MF:** C<sub>19</sub>H<sub>32</sub>O<sub>2</sub>  
**FW:** 292.5  
**Purity:** ≥98%  
**Stability:** ≥1 year at -20°C  
**Supplied as:** A solution in ethanol



### Laboratory Procedures

For long term storage, we suggest that pinolenic acid methyl ester be stored as supplied at -20°C. It should be stable for at least one year.

Pinolenic acid 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 pinolenic acid methyl ester in these solvents is approximately 30 mg/ml.

Pinolenic acid methyl ester is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, the ethanolic solution of pinolenic acid methyl ester should be diluted with the aqueous buffer of choice. Pinolenic acid methyl ester has a solubility of approximately 0.5 mg/ml in a 1:1 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Pinolenic acid is a polyunsaturated fatty acid found in Korean pine (*Pinus orientalis*) and maritime pine (*Pinus pinaster*) seed oils. Both oils have been found to have lipid-lowering properties. A diet containing maritime pine seed oil (MPSO) lowered HDL and ApoA-I levels in transgenic mice expressing human ApoA-I. MPSO was found to diminish cholesterol efflux *in vitro*.<sup>1</sup> Korean pine seed oil supplements may help in obesity by reduction of appetite. People taking this oil had an increase in the satiety hormones CCK and GLP-1 and a reduced desire to eat.<sup>2</sup> The activity of the oil is attributed to pinolenic acid. Due to the non-methylene-interrupted double bond at the Δ<sup>5</sup> position, pinolenic acid is not converted to arachidonic acid metabolically. Pinolenic acid can reduce arachidonic acid levels in the phosphatidylinositol fraction of HepG2 cells from 15.9% to 7.0%.<sup>3</sup> Pinolenic acid methyl ester is a neutral, more lipophilic form of the free acid.

### 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. *British Journal of Nutrition* **84**, 353-360 (2000).
2. Causey, J.L. Korean pine nut fatty acids induce satiety-producing hormone release in overweight human volunteers. *The 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006*.
3. Tamotsu, T., Tatsunori, T., Morishige, J., *et al.* Non-methylene-interrupted polyunsaturated fatty acids: Effective substitute for arachidonate of phosphatidylinositol. *Biochem. Biophys. Res. Commun.* **264**, 683-688 (1999).

### Related Products

Pinolenic Acid - Catalog No. 10008654 • Pinolenic Acid ethyl ester - Catalog No. 10008658

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

### MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

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