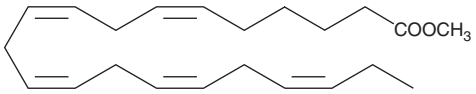
PRODUCT INFORMATION

Heneicosapentaenoic Acid methyl ester

Item No. 11622

CAS Registry No.: 65919-53-1
Formal Name: 6Z,9Z,12Z,15Z,18Z-heneicosapentaenoic acid, methyl ester
Synonyms: HPA methyl ester, SFE 22:5
MF: $C_{22}H_{34}O_2$
FW: 330.5
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

Heneicosapentaenoic acid (HPA) 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 HPA methyl ester in these solvents is >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 HPA methyl ester is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of HPA methyl ester in PBS, pH 7.2, is >100 µg/ml.

For greater aqueous solubility, HPA methyl ester can be directly dissolved in 0.15 M Tris-HCl (solubility of >1 mg/ml) and then diluted with PBS (pH 8.5) to achieve the desired concentration or pH. We do not recommend storing the aqueous solution for more than one day.

Description

HPA is a fatty acid present in trace amounts in the green algae *B. pennata Lamouroux* and in fish oils. Its chemical composition is similar to eicosapentaenoic acid (EPA) except elongated with one carbon on the carboxyl end, placing the first double bond in the Δ^6 position.[1] HPA can be used to study the significance of the position of the double bonds in n-3 fatty acids. It incorporates into phospholipids and into triacylglycerol *in vivo* with the same efficiency as EPA and docosahexaenoic acid (DHA) and exhibits strong inhibition of arachidonic acid synthesis from linoleic acid.[1] HPA is a poor substrate for prostaglandin H (PGH) synthase and for 5-lipoxygenase but retains the ability to rapidly inactivate PGH synthase.[1] In certain formulations, HPA methyl ester may serve as a prodrug, which should facilitate uptake of HPA and then be hydrolyzed by esterases to generate the free acid once incorporated into cells. It may also be useful as a reference standard in analytical work.

Reference

1. Larsen, L.N., Hovik, K., Bremer, J., *et al*. Heneicosapentaenoate (21:5n-3): Its incorporation into lipids and its effects on arachidonic acid and eicosanoid synthesis. *Lipids* **32**, 707-714 (1997).

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