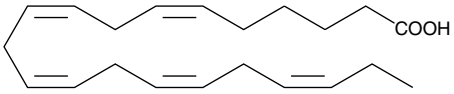
Product Information

Heneicosapentaenoic Acid

Item No. 10670

CAS Registry No.: 24257-10-1
Formal Name: 6Z,9Z,12Z,15Z,18Z-heneicosapentaenoic acid
Synonym: HPA
MF: $C_{21}H_{32}O_2$
FW: 316.5
Purity: ≥95%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that heneicosapentaenoic acid (HPA) be stored as supplied at -20°C. It should be stable for at least one year.

HPA 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 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 is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of HPA in PBS, pH 7.2, is <100 µg/ml.

For greater aqueous solubility, HPA 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.

HPA is a 21:5 ω-3 fatty acid present in trace amounts in the green alga *B. pennata* 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 ω-3 fatty acids. It incorporates into phospholipids and into triacylglycerol *in vivo* with the same efficiency as EPA and docosahexaenoic acid and exhibits strong inhibition of arachidonic acid synthesis from linoleic acid.[1] HPA is a poor substrate for prostaglandin H synthase (PGHS) (cyclooxygenase) and for 5-lipoxygenase but retains the ability to rapidly inactivate PGHS.[1]

References

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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Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com