

PRODUCT INFORMATION



all-cis-4,7,10,13,16-Docosapentaenoic Acid

Item No. 10008335

CAS Registry No.: 25182-74-5
Formal Name: 4Z,7Z,10Z,13Z,16Z-docosapentaenoic acid
Synonyms: all-cis-4,7,10,13,16-DPA, FA 22:5, Osbond Acid
MF: C₂₂H₃₄O₂
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

all-cis-4,7,10,13,16-Docosapentaenoic acid (all-cis-4,7,10,13,16-DPA) is supplied as a solution in ethanol. To change the solvent, simply evaporate the all-cis-4,7,10,13,16-DPA 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 all-cis-4,7,10,13,16-DPA 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 all-cis-4,7,10,13,16-DPA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. For greater aqueous solubility, all-cis-4,7,10,13,16-DPA can be directly dissolved in 0.1 M Na₂CO₃ (1 mg/ml) and then diluted with PBS (pH 7.2) to achieve the desired concentration or pH. We do not recommend storing the aqueous solution for more than one day.

Description

DPA (Item No. 90165) is a 22-carbon fatty acid found in fish oils. It is a minor constituent of the total serum unsaturated fatty acids in humans, ranging from 0.1 to 1%, and increases on dietary supplementation.¹ all-cis-4,7,10,13,16-DPA, also known as osbond acid, is an isomer of DPA. It is an ω-6 fatty acid formed by the elongation and desaturation of arachidonic acid (Item No. 90010). Levels of this fatty acid may be diminished during fatty acid desaturase syndrome and this may affect development.² Upregulated expression of hepatic elongation of very long fatty acids protein 6 and increased levels of very long chain fatty acids, including all-cis-4,7,10,13,16-DPA, are characteristic of non-alcoholic steatohepatitis, a preneoplastic condition of hepatocellular carcinoma.³

References

1. Marckmann, P., Lassen, A., Haraldsdóttir, J., *et al.* Biomarkers of habitual fish intake in adipose tissue. *Am. J. Clin. Nutr.* **62**(5), 956-959 (1995).
2. Steer, C.D., Lattka, E., Koletzko, B., *et al.* Maternal fatty acids in pregnancy, FADS polymorphisms, and child intelligence quotient at 8 y of age. *Am. J. Clin. Nutr.* **98**(6), 1575-1582 (2013).
3. Muir, K., Hazim, A., He, Y., *et al.* Proteomic and lipidomic signatures of lipid metabolism in NASH-associated hepatocellular carcinoma. *Cancer Res.* **73**(15), 4722-4731 (2013).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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