

PRODUCT INFORMATION



Docosahexaenoic Acid ethyl ester

Item No. 9090310

CAS Registry No.: 81926-94-5

Formal Name: 4Z,7Z,10Z,13Z,16Z,19Z-

docosahexaenoic acid, ethyl ester

Synonyms: Cervonic Acid ethyl ester, DHA ethyl ester

MF: $C_{24}H_{36}O_2$

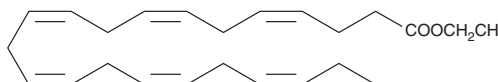
FW: 356.5

Purity: $\geq 98\%$

Supplied as: A solution in ethanol

Storage: $-20^{\circ}C$

Stability: As supplied, 1 year from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

Docosahexaenoic acid ethyl ester (DHA ethyl 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 ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of DHA ethyl ester in ethanol is approximately 500 mg/ml and is approximately 100 mg/ml in DMSO and DMF.

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 DHA ethyl ester is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of DHA ethyl ester in PBS, pH 7.2, is approximately 0.15 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Fish oils in the diet have anti-inflammatory and cardiovascular benefits due to an abundance of ω -3 polyunsaturated fatty acids (PUFAs), including DHA.¹ DHA is the most abundant ω -3 PUFA in neural tissues, especially in the retina and brain. DHA ethyl ester is the stabilized ethyl ester form of the ω -3 22:6 fatty acid. Dietary intake of DHA ethyl ester enhances maze-learning ability in old mice.² In rats, dietary DHA ethyl ester increases plasma and erythrocyte membrane DHA levels without altering the content of the ω -6 arachidonic acid.³ Dietary DHA ethyl ester increases fatty acid oxidation enzymes in rats and, in humans with peroxisomal disorders, improves vision, liver function, muscle tone and social contact.^{4,5} The ω -3 fatty acid eicosapentaenoic acid competitively inhibits the metabolism of arachidonic acid by COX enzymes, suggesting that DHA ethyl ester may also directly modulate the actions of enzymes involved in fatty acid metabolism.⁶

References

1. von Schacky, C. *Vascular Health and Risk Management* **2**(3), 251-262 (2006).
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3. Valenzuela, A., Valenzuela, V., Sanhueza, J., et al. *Ann. Nutr. Metab.* **49**, 49-53 (2005).
4. Hong, D.D., Takahashi, Y., Kushiro, M., et al. *Biochim. Biophys. Acta* **1635**, 29-36 (2003).
5. Martínez, M., Vázquez, E., García-Silva, M.T., et al. *Am. J. Clin. Nutr.* **71**, 376S-385S (2000).
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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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