

PRODUCT INFORMATION



Docosahexaenoic Acid ethyl ester-d₅

Item No. 9001245

Formal Name: 4Z,7Z,10Z,13Z,16Z,19Z-docosahexaenoic acid, ethyl ester-d₅

Synonyms: Cervonic Acid ethyl ester-d₅, DHA ethyl ester-d₅

MF: C₂₄H₃₁D₅O₂

FW: 361.6

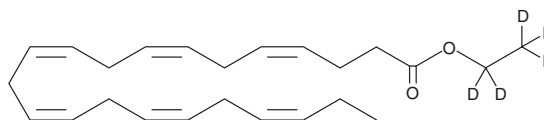
Chemical Purity: ≥98%

Deuterium

Incorporation: ≥99% deuterated forms (d₁-d₅); ≤1% d₀

Stability: ≥1 year at -20°C

Supplied as: A solution in ethanol



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Docosahexaenoic Acid ethyl ester-d₅ (DHA ethyl ester-d₅) contains five deuterium atoms. It is intended for use as an internal standard for the quantification of DHA ethyl ester (Item No. 9090310) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

DHA ethyl ester-d₅ 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-d₅ in ethanol is approximately 500 mg/ml and is approximately 100 mg/ml in DMSO and DMF.

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 (EPA) competitively inhibits the metabolism of arachidonic acid by cyclooxygenase 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).
2. Lim, S.-Y. and Suzuki, H. *J. Nutr.* **130**, 1629-1632 (2000).
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. Martinez, M., Vázquez, E., García-Silva, M.T., et al. *Am. J. Clin. Nutr.* **71**, 376S-385S (2000).
6. Takano, K., Tabata, Y., Kitao, Y., et al. *Am. J. Physiol. Cell Physiol.* **292**, C353-C361 (2007).

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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