

PRODUCT INFORMATION



Docosahexaenoic Acid-d₅

Item No. 10005057

CAS Registry No.: 1197205-71-2
Formal Name: 4Z,7Z,10Z,13Z,16Z,19Z-docosahexaenoic-21,21,22,22,22-d₅ acid
Synonyms: C22:6 n-3-d₅, C22:6(4Z,7Z,10Z,13Z,16Z,19Z)-d₅, Cervonic Acid-d₅, DHA-d₅, 4,7,10,13,16,19-Docosahexaenoic Acid-d₅, FA 22:6-d₅

MF: C₂₂H₂₇D₅O₂
FW: 333.5

Chemical Purity: ≥98% (Docosahexaenoic Acid)

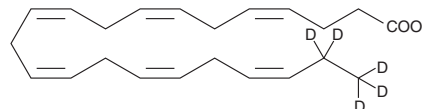
Deuterium

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

Supplied as: A 500 µg/ml 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

Docosahexaenoic acid-d₅ (DHA-d₅) is intended for use as an internal standard for the quantification of DHA (Item No. 90310) 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-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 DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of DHA-d₅ in these solvents is approximately 50 mg/ml.

Description

DHA is a long-chain ω-3 polyunsaturated fatty acid (PUFA) found in fish and algal oils.¹ It comprises approximately 40% of total brain PUFAs and is abundant in grey matter and retinal membranes.² DHA typically represents 0.52-7.5% of human total plasma fatty acids. It is produced from α-linolenic acid (ALA; Item Nos. 90210 | 21910) via a series of desaturase- and elongase-catalyzed reactions, resulting in a docosapentaenoic acid (DPA; Item No. 90165) intermediate, which is elongated, desaturated, and β-oxidized to produce DHA.³ DHA can be liberated from cellular membranes by phospholipase A₂ (PLA₂) and converted to numerous oxylipins, including specialized pro-resolving mediators (SPMs), which are produced by lipoxygenases and include D-series protectins and resolvins, as well as maresins, that regulate host defense and the resolution of inflammation.⁴ DHA has roles in several physiological and pathological processes, including neural development, cardiovascular diseases, obesity, and inflammation.^{3,5}

References

1. Kuratko, C.N., and Salem, N., Jr. *Prostaglandins Leukot. Essent. Fatty Acids* **81(2-3)**, 111-118 (2009).
2. Lacombe, R.J.S., Chouinard-Watkins, R., and Bazinet, R.P. *Mol. Aspects Med.* **64**, 109-134 (2018).
3. Calder, P.C. *Ann. Nutr. Metab.* **69(Suppl 1)**, 7-21 (2016).
4. Basil, B.C. and Levy, B.D. *Nat. Rev. Immunol.* **16(1)**, 51-67 (2016).
5. Arnoldussen, I.A.C. and Kiliaan, A.J. *Mar. Drugs* **12(12)**, 6190-6212 (2014).

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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