

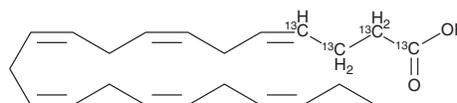
PRODUCT INFORMATION



Docosahexaenoic Acid 1,2,3,4-¹³C

Item No. 31104

Formal Name: 4Z,7Z,10Z,13Z,16Z,19Z-docosahexaenoic-1,2,3,4-¹³C₄ acid
Synonyms: C22:6 n-3 1,2,3,4-¹³C,
C22:6(4Z,7Z,10Z,13Z,16Z,19Z) 1,2,3,4-¹³C,
Cervonic Acid 1,2,3,4-¹³C, DHA 1,2,3,4-¹³C,
FA 22:6-¹³C
MF: C₁₈[¹³C]₄H₃₂O₂
FW: 332.5
Purity: ≥95%
Supplied as: A 100 µg/ml solution in ethanol
Storage: -20°C
Stability: ≥1 year



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

Description

Docosahexaenoic acid 1,2,3,4-¹³C (DHA 1,2,3,4-¹³C) is intended for use as an internal standard for the quantification of DHA (Item Nos. 90310 | 17950) by GC- or LC-MS. 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 Nos. 90165 | 21907) 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. Biomarkers of DHA status. *Prostaglandins Leukot. Essent. Fatty Acids* **81(2-3)**, 111-118 (2009).
2. Lacombe, R.J.S., Chouinard-Watkins, R., and Bazinet, R.P. Brain docosahexaenoic acid uptake and metabolism. *Mol. Aspects Med.* **64**, 109-134 (2018).
3. Calder, P.C. Docosahexaenoic acid. *Ann. Nutr. Metab.* **69(Suppl 1)**, 7-21 (2016).
4. Basil, B.C. and Levy, B.D. Specialized pro-resolving mediators: Endogenous regulators of infection and inflammation. *Nat. Rev. Immunol.* **16(1)**, 51-67 (2016).
5. Arnoldussen, I.A.C. and Kiliaan, A.J. Impact of DHA on metabolic diseases from womb to tomb. *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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