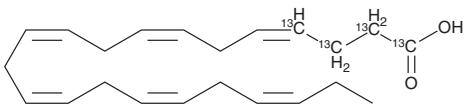
PRODUCT INFORMATION

Docosahexaenoic Acid 1,2,3,4-^{13}C

Item No. 31104

Formal Name:	4Z,7Z,10Z,13Z,16Z,19Z-docosahexaenoic-1,2,3,4-$^{13}C_4$ acid
Synonyms:	C22:6 *n*-3 1,2,3,4-^{13}C, C22:6(4Z,7Z,10Z,13Z,16Z,19Z) 1,2,3,4-^{13}C, Cervonic Acid 1,2,3,4-^{13}C, DHA 1,2,3,4-^{13}C, FA 22:6-13C
MF:	$C_{18}[^{13}C]_4H_{32}O_2$
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-^{13}C (DHA 1,2,3,4-^{13}C) 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 A_2 (PLA_2) 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).

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