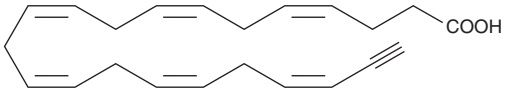
PRODUCT INFORMATION

Docosahexaenoic Acid Alkyne

Item No. 16689

CAS Registry No.: 2692622-57-2
Formal Name: 4Z,7Z,10Z,13Z,16Z,19Z-docosahexaen-21-ynoic acid
Synonyms: Click Tag™ DHA Alkyne, FA 22:8
MF: $C_{22}H_{28}O_2$
FW: 324.5
Purity: ≥98%
UV/Vis.: λ_{max}: 224 nm
Supplied as: A 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 alkyne 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 docosahexaenoic acid alkyne in these solvents is approximately 50 mg/ml.

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 docosahexaenoic acid alkyne is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of docosahexaenoic acid alkyne in PBS (pH 7.2) is approximately 0.1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Docosahexaenoic acid alkyne is an ω-alkyne derivative of docosahexaenoic acid (Item No. 90310). The ω-alkyne moiety allows Cu(I)-catalyzed cycloaddition chemistry with molecules containing an azide group.[1,2] Alternatively, this modified lipid can be used to synthesize other alkyne-containing products, such as glycerophospholipids, for click chemistry.[3] ω-Alkyne lipid derivatives, such as docosahexaenoic acid alkyne, can also be used to track fatty acid metabolism in cells *via* click chemistry linkage to fluorophores.[4]

References

1. Gaebler, A., Penno, A., Kuerschner, L., *et al.* A highly sensitive protocol for microscopy of alkyne lipids and fluorescently tagged or immunostained proteins. *J. Lipid. Res.* **57(10)**, 1934-1947 (2016).
2. Grammel, M. and Hang, H.C. Chemical reporters for biological discovery. *Nat. Chem. Biol.* **9(8)**, 475-484 (2013).
3. Milne, S.B., Tallman, K.A., Serwa, R., *et al.* Capture and release of alkyne-derivatized glycerophospholipids using cobalt chemistry. *Nat. Chem. Biol.* **6(3)**, 205-207 (2010).
4. Thiele, C., Papan, C., Hoelper, D., *et al.* Tracing fatty acid metabolism by click chemistry. *ACS Chem Biol.* **7(12)**, 2004-2011 (2012).

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