

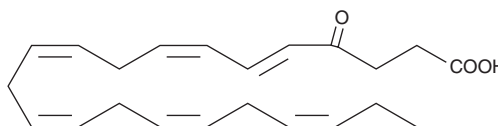
PRODUCT INFORMATION



4-oxo Docosahexaenoic Acid

Item No. 21373

CAS Registry No.: 845673-74-7
Formal Name: 4-oxo-5E,7Z,10Z,13Z,16Z,19Z-docosahexaenoic acid
Synonym: 4-oxo DHA
MF: C₂₂H₃₀O₃
FW: 342.5
Purity: ≥90%
UV/Vis.: λ_{max}: 277 nm
Supplied as: A solution in ethanol
Storage: -80°C
Stability: ≥2 years



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

Laboratory Procedures

4-oxo Docosahexaenoic acid (4-oxo DHA) 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 4-oxo DHA 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 4-oxo DHA is needed, it can be prepared by evaporating the ethanol and directly dissolving the neat oil in aqueous buffers. The solubility of 4-oxo DHA 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

4-oxo-DHA is a putative metabolite of DHA (Item No. 90310) with antiproliferative and PPAR γ agonist activity. It inhibits the growth of several triple negative breast cancer cell lines (MCF-10F, trMCF, bsMCF, MDA-MB-231, and BT549) at 50-100 μ M, however it increased proliferation of MCF-7 cells.¹ 4-oxo DHA binds covalently to PPAR γ and activates gene transcription in luciferase reporter assays and in dendritic cells with EC₅₀ values of approximately 8-16 μ M.²

References

1. Pogash, T.J., El-Bayoumy, K., Amin, S., *et al.* Oxidized derivative of docosahexaenoic acid preferentially inhibit cell proliferation in triple negative over luminal breast cancer cells. *In Vitro Cell. Dev. Biol. Anim.* **51**(2), 121-127 (2015).
2. Itoh, T., Fairall, L., Amin, K., *et al.* Structural basis for the activation of PPAR γ by oxidized fatty acids. *Nat. Struct. Mol. Biol.* **15**(9), 924-931 (2008).

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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