

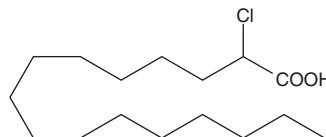
PRODUCT INFORMATION



2-chloro Palmitic Acid

Item No. 26107

CAS Registry No.: 19117-92-1
Formal Name: 2-chloro-hexadecanoic acid
Synonyms: 2-ClHA, 2-CLPA
MF: C₁₆H₃₁ClO₂
FW: 290.9
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

2-chloro Palmitic acid is supplied as a crystalline solid. A stock solution may be made by dissolving the 2-chloro palmitic acid in the solvent of choice. 2-chloro Palmitic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of 2-chloro palmitic acid in ethanol is approximately 30 mg/ml and approximately 20 mg/ml in DMSO and DMF.

2-chloro Palmitic acid is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 2-chloro palmitic acid should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. 2-chloro Palmitic acid has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

2-chloro Palmitic acid is a monochlorinated form of palmitic acid (Item No. 10006627). It is produced in a myeloperoxidase (MPO) and time-dependent manner in neutrophils stimulated by phorbol 12-myristate 13-acetate (PMA; Item No. 10008014). 2-chloro Palmitic acid (10 µM) induces neutrophil extracellular trap (NET) formation (NETosis) in human neutrophils, increasing DNA release from neutrophils, colocalization of MPO with extracellular DNA (ecDNA), and trapping of *E. coli*.¹ It increases COX-2 protein levels in human coronary artery endothelial cells (HCAECs) when used at a concentration of 50 µM and increases production of P-selectin, von Willebrand factor, and angiopoietin-2 in HCAECs, as well as neutrophil and platelet adherence, when used at a concentration of 10 µM.^{2,3} 2-chloro Palmitic acid (10-50 µM) also induces apoptosis in THP-1 cells and primary human monocytes and increases caspase-3 activity in THP-1 cells.⁴

References

1. Palladino, E.N.D., Katunga, L.A., Kolar, G.R., *et al.* 2-Chlorofatty acids: Lipid mediators of neutrophil extracellular trap formation. *J. Lipid. Res.* **59**(8), 1424-1432 (2018).
2. Messner, M.C., Albert, C.J., and Ford, D.A. 2-Chlorohexadecanal and 2-chlorohexadecanoic acid induce COX-2 expression in human coronary artery endothelial cells. *Lipids* **43**(7), 581-588 (2008).
3. Hartman, C.L., Duerr, M.A., Albert, C.J., *et al.* 2-Chlorofatty acids induce Weibel-Palade body mobilization. *J. Lipid. Res.* **59**(1), 113-122 (2018).
4. Wang, W.Y., Albert, C.J., and Ford, D.A. α-Chlorofatty acid accumulates in activated monocytes and causes apoptosis through reactive oxygen species production and endoplasmic reticulum stress. *Arterioscler. Thromb. Vasc. Biol.* **34**(3), 526-532 (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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