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Comparison of oxidized 1-palmitoyl-2-arachidonoyl-sn-glycero-3-phosphocholine products on human low-density and high-density lipoproteins by ESI-MS analyses

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Oxidized products of 1-palmitoyl-2-arachidonoyl-sn-glycero-3-phosphocholine (PAPC) are pro-inflammatory and bioactive. The amounts and structures of oxidized PAPC products on lipoproteins have not been fully understood yet. In this study, lipoproteins were oxidized by Fenton reaction. Phospholipids on lipoproteins were then isolated by liquid-liquid and solid-phase extractions. ESI-MS analysis was used to analyze oxidized PAPC products on human low-density lipoprotein (LDL) and high-density lipoprotein (HDL). A total of 9 long-chain and 10 short-chain oxidized PAPC products have been analyzed. The ion intensities of six oxidized PAPC products including $m/z = 820.5, 836.5, 850.5, 622, 650$ and 690 are significantly higher for oxidized LDL than for native LDL. However, the ion intensities of oxidized PAPC products isolated from oxidized HDL and native HDL are similar.

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