Determination of Hydroxyoctadecadienoic Acids

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Oxidation of low-density lipoproteins (LDL) plays a crucial role in inflammatory diseases and aging. The main oxidation products of LDL are stereoisomeric 9-hydroxy-10,12-octadecadienoic acids (9-HODEs) and 13-hydroxy-9,11-octadecadienoic acids (13-HODEs). Nevertheless the content of HODEs in natural oxidized LDL is low compared to other components, thus determination of HODEs requires a sample enrichment in most cases. Big losses are encountered during the necessary processing due to the instability of HODEs against acidic conditions. Therefore the use of labeled standards is required. Standards with an ^{18}O label in the carboxylic group used previously may partly suffer a loss of the label by exchange with water. In this paper we describe an improved work-up procedure and the preparation of standards labeled with ^{18}O in the hydroxylic group which is not exchangeable.

Key words: Lipid Peroxidation, Hydroxyoctadecadienoic Acids, Inflammatory Diseases