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Oxidation kinetics of sardine oil in the presence of commercial immobilized lipases commonly used as biocatalyst

Ángela García Solaesa, María Teresa Sanz, Rodrigo Melgosa, Sagrario Beltrán*

Department of Biotechnology and Food Science (Chemical Engineering Section), University of Burgos, 09001 Burgos. Spain

Abstract

Oxidation kinetics of sardine oil have been determined at 40, 65 and 90ºC by measuring concentration of primary and secondary oxidation products in the presence of commercial immobilized lipases (Lipozyme 435, Lipozyme RM and Lipozyme TL) commonly used as biocatalyst in lipid modification reactions. Oxidation products concentration was found to be lower when the immobilized lipases were added at the highest temperatures studied. The lowest oxidation indices were observed in the presence of Lipozyme RM.

Although the mechanism to explain this decrease in the oxidation products is not still clear, these results might indicate that the use of these immobilized lipases in lipase-catalyzed reactions of fish oils at high temperature (90ºC) will yield higher reaction rates but also a reduction of the oxidation products formed due to oxidation of polyunsatured fatty acids.

Keywords: *fish oil, omega-3, oxidation products, commercial immobilized lipases.*

*Corresponding author. Tel.: +34 947 258810. Fax: ++34947258831. E-mail address tersanz@ubu.es