

# Accepted Manuscript

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



PII: S0023-6438(18)30446-8

DOI: [10.1016/j.lwt.2018.05.032](https://doi.org/10.1016/j.lwt.2018.05.032)

Reference: YFSTL 7142

To appear in: *LWT - Food Science and Technology*

Received Date: 22 January 2018

Revised Date: 10 May 2018

Accepted Date: 11 May 2018

Please cite this article as: Solaesa, Á.García., Sanz, María.Teresa., Melgosa, R., Beltrán, S., Oxidation kinetics of sardine oil in the presence of commercial immobilized lipases commonly used as biocatalyst, *LWT - Food Science and Technology* (2018), doi: 10.1016/j.lwt.2018.05.032.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

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

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

4           Department of Biotechnology and Food Science (Chemical Engineering Section),

5           University of Burgos, 09001 Burgos. Spain

6           **Abstract**

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

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

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

---

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

Download English Version:

<https://daneshyari.com/en/article/8890438>

Download Persian Version:

<https://daneshyari.com/article/8890438>

[Daneshyari.com](https://daneshyari.com)