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## BOOK OF ABSTRACTS



## I10. Industrial and Food Microbiology and Biotechnology

### P346. Valorization of fish by-products: physico-chemical properties of skin gelatins

Jorge Pinto<sup>1</sup>, Sérgio C. Sousa<sup>2</sup>, José A. Vázquez<sup>2</sup>, Ricardo I. Pérez-Martín<sup>2</sup>, Ana Maria Gomes<sup>1</sup>, Ana Cristina Freitas<sup>1</sup>

<sup>1</sup> Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina – Laboratório Associado, Escola Superior de Biotecnologia, Portugal

<sup>2</sup> Grupo de Reciclado y Valorización de Materiales Residuales (REVAL), Instituto de Investigaciones Mariñas (IIM-CSIC), r/ Eduardo Cabello, 6. Vigo-36208. Galicia – Spain

**E-mail:** [amgomes@porto.ucp.pt](mailto:amgomes@porto.ucp.pt)

In the fish processing industry an important fraction of the enormous amount of wastes produced are fish skins, part of which may be valorized through the extraction of gelatins. This research work exploited the extraction and characterization of gelatins from the skin of two seawater fish species, namely codfish and salmon. Characterization was performed by rheology, in which phase angle and, elastic and viscous moduli ( $G'$  and  $G''$ ) were determined throughout temperature ramps of 4-40°C and 40-4°C, which allowed to assess melting and gelling temperatures, respectively. Texture analysis, in which Bloom, rupture strength, brittleness and adhesiveness were measured, allowed comparison of the physical properties of the gelatins. Rheology results showed that, in codfish gelatins, melting temperature decreased from 18.5 to 14.5°C when extraction temperature increased from 20 to 50°C and gelling temperatures were around 5°C for codfish gelatins. Elastic and viscous moduli varied with extraction temperature; higher for codfish gelatin extracted at milder temperatures. Lower gelling temperatures may be due to lower content of proline/hydroxyproline in fish gelatin. Melting temperatures for salmon gelatins were similar between all tested gelatins (17-18°C), while gelling temperatures varied between 8.4-4.7°C. Regarding  $G'$  and  $G''$ , behaviors varied between temperature ramps. Texture analysis, assessing gelatins physical properties, concerning Bloom and rupture strength, showed that, in general, salmon gelatins presented higher values than codfish counterparts. Overall, results revealed that the species from which the gelatin was extracted, as well as the extraction process used, were key parameters in order to obtain a final product with specific properties. Such achievements are important to the food industry, by paving the way to the introduction in the market of gelatins with distinct rheological and textural properties, which enables them to enlarge their range of applications.

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