

## Valorization of a protein fraction from the production of a meat pigment derived from porcine liver

**TOLDRM. (1), PAR D. (1), XIFRE E. (1), CARRETERO C. (1)**

<sup>1</sup> University of Girona, Girona, Spain

Nowadays, there is increasing interest in developing strategies for the efficient and sustainable use of animal by-products since they are a good source of valuable proteins. This work is framed in a project entitled "Obtaining zinc-protoporphyrin-based pigments and functional proteins from animal co-products". The general objective of the project was to obtain ingredients with technological and/or biological functionality from underutilized animal co-products with a low commercial value, such as porcine liver or blood. The pigment based on the formation of Zinc-protoporphyrin (ZnPP), in which the iron atom of the porphyrin ring has been replaced by a zinc atom, has recently been described in some meat products without added nitrites or nitrates.

The objective of the work was the physicochemical characterization and assessment of the functional properties of a protein fraction discarded in the production process of ZnPP pigment from pork liver, in order to reduce waste generation following a circular bioeconomy system. The effects of freeze-drying on the physicochemical characteristics of the protein fraction were determined.

The protein fraction showed poor techno-functional properties due to the extraction conditions, therefore, it could not be used as a techno-functional ingredient. However, due to its reddish-brown coloration and high protein N content, it could be used as a meat extender or to improve color of various meat products. Moreover, it might show some interesting biological functionalities such as antimicrobial, antioxidant and/or antihypertensive activities.

Thus, in this work, the in vitro antimicrobial activity of the freeze-dried product was investigated by means of a turbidimetric method using a Bioscreen automatic microbial growth monitoring system. The inhibitory growing capacity of a gram-positive (*Staphylo*