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### RETRIEVAL AND CHARACTERISATION OF BIOACTIVE PEPTIDES FROM TUNA PROCESSING WASTE BY MEANS OF UHPLC-MS

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Processing of raw fish into food products generates large quantities of by-products (meat, scales, head, viscera and roes), which are usually discarded and need to be disposed. However, many of them may exert nutritional value, related to the content in essential molecules to the human diet; thus, their re-use after processing of raw foodstuffs may surely improve the economic aspect of food processing industry and moreover positively impact the environment. Recent surveys have estimated that in fishery industry, as well as in other food production sectors, the utilization of by-products will experience a significant increase in the future. Also waste products revenue will be a key factor in maintaining long-term profitability of industrial food processing.

By-products are important sources of aminoacids, peptides, and proteins; the latter can be converted by enzymatic hydrolysis to value-added peptides and applied to improve and upgrade the functional and nutritional properties of nutraceuticals. Possible health beneficial effects of peptides relate to nutrient uptake, immune defense, opioid, antioxidant and antihypertensive activities, holding promise for use of the byproducts as functional food ingredients, in the production of dietary formulations.

In this research, Yellowfin tuna (*Thunnus albacares*) meat is used as a model for fish processing by-products, as it is a large epipelagic species widely distributed in the tropical and subtropical waters of the major oceans; it represented the starting material for protein extraction and analysis. As first experimental step, much effort was put on the development of LC-MS/MS based analytical methods capable to afford adequate selectivity and sensitivity for the determination of proteome samples, as an outcome of the enhanced separation efficiency and high mass resolution.

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