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Characterization of marine oils from fish transforming industry by-products – a comprehensive approach

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Lipids from marine origin have a composition determined by an accurately identification and quantification of the fatty acid (FA) content. Essential long chain fatty polyunsaturated fatty acids (PUFAs) play an important part in human health, concerning the n-3/n-6 ratio used as index for nutritional value. It has been well established that fish oils and marine microalgae are abundant sources of n-3 fatty acids, being predominantly in perivisceral organs, with uptakes exceeding 50% of the wet weight. This work focus on discards from fish transforming industry (FTI) and offers a characterization of marine oils and fats from different sources representative of regional fishing sector and methods of extraction. The activities were developed under the project MarineBlueRefine, in a consortium with a local company (Madedbiotech). For that reason, not all the extraction details should be mentioned in the poster. An *in situ* simultaneous lipid extraction and transesterification was performed to avoid manipulations and rapid analysis. Results of characterization by spectroscopic methods in conjunction with PCA multivariable analysis (FTIR-ATR and high-resolution ¹H and ¹³C RMN), provides insight in molecular structure of FA and relative concentration of n-3 PUFAs. This data is in direct correlation with characterization of FAs profiles by GC-FID and show a favorable ratio towards n-3. Another index of the nutritional value of fish oils indicates a good value of PUFA relative to saturated FA.

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