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# EVALUATION OF MACROALGAE AS A SOURCE OF NUTRIENTS FOR NUTRACEUTICAL FOODS

Paula García-Oliveira [1,2], Anxo Carrerira-Casais [1,2], Eliana Pereira [2],*, Cristina Caleja [2], Marta Barral [1], Pascual Garcia Perez [1], Lillian Barros [2], Miguel A. Prieto [1], Jesus Simal Gandara[1], Isabel C.F.R. Ferreira [2]

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Macroalgae are responsible for most of the production in aquatic ecosystems, playing an important role in the biosphere [1]. Although the consumption of macroalgae as foods is typical of Asian countries, these products are gaining popularity in Europe and North America [2]. Macroalgae are known for their excellent nutritional value, specially due to their high levels of protein and low lipid and caloric content. Furthermore, they are rich in numerous bioactive compounds, such as vitamins, essential fatty acids and phenolic compounds, which have been demonstrated to provide important health benefits to consumers [3].

This work aims to determine proteins, fat ash, carbohydrates and energy contents, and also the composition in organic acids and fatty acids of some seaweeds species, namely *Himanthalia elongata* L., S.F. Gray; *Laminaria ochroleuca* Bach.Pyl.; *Saccharina latissima* L.; *Porphyra* sp. C.Agardh; and *Palmaria palmata* (L.) Kuntze. The nutritional aspects were determined using official methodologies for food analysis, while organic acids by UPFLC-PDA and fatty acids by GC-FID. Proteins where the main macronutrients present with values ranging between 6 and 30 g/100 g of dry weight (dw) for *S. latissima* and *Porphyra* sp., respectively. On the other hand, a low lipid content was evident in all the studied seaweed species with values below 1 g/100 g dw. The energy values ranged from 218 and 370 kcal/100 g dw for *L. ochrouleuca* and *Porphyra* sp, respectively. Furthermore, several compounds of interest were identified. Among organic acids, oxalic acid was the only molecule present in all species. Regarding fatty acid content, saturated, unsaturated and polyunsaturated fatty acids were also determined, showing a clear heterogeneity of concentrations depending on the species.

To conclude, the present study demonstrates the great potential of the selected macroalgae as source of non-animal protein and also some molecules with interesting properties. Thus, the incorporation of this macroalgae in the daily diet will have several benefits for consumers.

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