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ORAL COMMUNICATIONS

IN VITRO BIOACTIVE POTENTIAL OF SEVERAL MACROALGAE SPECIES

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Algae are described as a source of bioactive compounds, with nutritional and therapeutic benefits for the human health [1]. In general, dried macroalgae are foods with a low-caloric content, being rich in non-digestible polysaccharides, proteins and essential aminoacids, vitamins, interesting minerals and phenolic compounds. Although the lipid content is low, this matrix is rich in polyunsaturated fatty acids, essential for the correct functioning of the organism [2]. This study aimed to evaluate the bioactive potential of the hydroethanolic extract of several macroalgae species, namely *Laminaria ochroleuca* Bachelot de la Pylaie, *Saccharina latissila* Linnaeus, *Ulva lactuca* Linnaeus, *Palmaria palmata* L., *Porphyra* sp., *Codium tomentosum* Stackhouse, *Undaria pinnafitida* (Harvey) Suringar and *Himantalia elongate* (Linnaeus) SF Grey. The antioxidant activity was evaluated through the OxHLIA method; the antimicrobial activity was determined using the microdilution method using Gram-positive and Gram-negative bacteria, and fungi; and the toxicity was evaluated in a non-tumour primary cell culture (PLP2), by applying the sulforhodamine B assay. The results showed bioactive activity in all the *in vitro* assays performed. In the antioxidant activity, *L. ochroleuca* was the species that stood out with an EC_{50} value of 1.7±0.3 mg/mL. Otherwise, for the antibacterial activity all macroalgae revealed inhibitory capacity against the studied strains, especially *S. latissila* and *H. elongata* with MIC values of 0.5 mg/mL for the *Salmonella Typhimurium* and *Bacillus cereus* strains, respectively. *H. elongata* also presented the most promising values for the bactericidal capacity (MBC=1 mg/mL) for *Bacillus cereus*. Regarding the antifungal activity, inhibitory and fungicidal capacity was also verified in all the studied species, particularly in *S. latissila* with MIC values of 0.5 mg/mL and MFC values of 1 mg/mL for *Aspergillus fumigatus*, *Aspergillus niger* and *Aspergillus versicolor* strains. Moreover, all the studied macroalgae samples did not present toxicity in the non-tumour primary cell culture evaluated. This work allowed to verify the *in vitro* bioactive effects of several macroalgae species, namely regarding its antioxidant, antibacterial and antifungal potential.

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