Geographical variations in phenolic content and associated antioxidative activities of extracts and semi-purified fractions of *Sargassum* and *Turbinaria* species (Fucales, Phaeophyceae) from the South Pacific

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Sargassaceae represents high biomass in tropical environments. Different species of *Sargassum* and *Turbinaria* were collected within the South Pacific area (New Caledonia, Salomon and Fiji islands) in the aim of finding new ways of applications of these brown macroalgae. Phenolic compounds were extracted from the collected and lyophilized biomass and their content were determined using the Folin-Ciocalteu procedure. DPPH radical scavenging and \( \beta \)-carotene bleaching test were carried out on crude extracts to select the active ones. Whatever the geographical area, Turbinaria species produced significantly more phenolic compounds than Sargassum species. Moreover, spatial variations were highlighted within a given species. Purification was lead on the most active extracts using ultrafiltration and dialysis to isolate phenolic compounds by size. Semi-purified fractions of phenolic compounds were also tested using antioxidative tests, in a final aim of finding the size classes of active phenolic compounds. Results are discussed in regard of the size classes of phenolic compounds, the polarity of active phenolic compounds and finally in regard of their significance in the chemical ecology of these brown macroalgae.

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