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program **Excursion guide**

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P25. Extraction and quantification of water-soluble vitamins from selected macroalgae by RP-HPLC

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As generally known, water-soluble vitamins are essential metabolites, regulating factors necessary for human health and growth. In the present study we developed and optimized a methodology to extract, separate, identify and quantify B-group vitamins from selected macroalgae collected in the littoral zone of S. Miguel Island, Azores, Portugal: two Chlorophyta, *Chaetomorpha linum* (***1***) and *Codium adhaerens* (***2***), and four Phaeophyta, *Cystoseira humilis* (***3***), *Padina pavonica* (***4***), *Sargassum cymosum* (***5***) and *S. vulgare* (***6***). A simple and sensitive reversed-phase high performance liquid chromatography method with ultraviolet detection (RP-HPLC/UV) was developed for the simultaneous determination of vitamins B_1, B_2, B_3, B_6 and B_{12}, on Alltima HP C18 HL 5 µm (250 mm x 4.6 mm i.d.) column using and an aqueous-organic mobile phase, in acidic media. The results (expressed in µg per g of dry weight) revealed that: B_1 content varies from 1.50 (***5***) to 83.21 (***2***) µg/g; B_2 content varies from 3.63 (***5***) to 34.50 (***1***) µg/g; B_3 content varies from 3.38 (***5***) to 62.63 (***6***) µg/g; B_6 content varies from 10.75 (***5***) to 73.75 (***3***) µg/g and B_{12} content varies from 12.50 (***2***) to 72.00 (***5***) µg/g. In conclusion, this study indicates that Azorean algae are rich in B vitamins, with potential health benefits, particularly species ***2-3*** and ***6***, that *are a rich source of:* B_1, B_2 and B_6 (***2***); B_6 and B_{12} (***3***), and B_3, B_6 and B_{12} (***6***). The present data also revealed that Phaeophytae samples, in particular the two *Sargassum* spp., are the highest source of vitamin B_{12} that plays an important role in the normal functioning of the brain and the nervous system and is also involved in the metabolism of every cell of the human body, particularly affecting the DNA synthesis and regulation.