

Variations in the polysaccharide composition of marine algae: Effect of tissue age and environmental conditions

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CV, publications and running projects be seen from [here](#)

Information about the research group can be seen from [here](#)

The PhD project will investigate the relationships between polysaccharide composition and environmental conditions, stress factors, and tissue age in red, brown, and green seaweeds. Particular emphasis will be placed on the widely utilized genera *Kappaphycus* and *Betaphycus* and their different strains and on *Fucus vesiculosus*.

The main tasks in the project are as follows.

- Development of a micro extraction method for polysaccharide isolation from different algal biomasses (red, brown and green seaweeds).
- General characterization and purification of the polysaccharides isolated by small-scale extraction procedures.
- Detailed characterization of the preparations by structural analysis and chromatographic methods.
- Determination of the rheological, thermal and optical properties of the obtained polysaccharide samples
- The possibility to conduct 1...3 month long internships in Philippines to obtain algal samples from cultivated stocks – <https://up.edu.ph/wild-again-how-this-nursery-is-revitalizing-our-seaweed-industry/>

The main analytical/instrumental methods used in the project are: NMR, FTIR, FT-Raman, HPLC-PAD (pulsed amperometric detection), size exclusion chromatography, dynamic rheometry, optical studies, spectrophotometry.

Keywords: Phycocolloids, Carrageenans, Alginates, Polysaccharides, Extraction, Structural characterization

More information about Complex Systems in Natural Sciences PhD programme:

<https://www.tlu.ee/en/lti/complex-systems-natural-sciences-phd>