



TALLINN UNIVERSITY

School of Natural
Sciences and Health

Analytical Biochemistry 2019/2020 admission - Special PhD position for applicants from Africa

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Valorization of Seaweed Biomasses: Potential of the Species from the Coastal Waters of Africa

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The PhD project focuses on isolation of beneficial compounds (e.g. gelling substances, pigments, bioactive molecules) from various seaweed species originating from the coastal waters of Africa.

The main tasks of the project are as follows.

- Sample collection from the coastal waters of Africa. Reference samples will be obtained from the Baltic Sea and from Pacific Ocean.
- Isolation of the beneficial compounds from the seaweed biomasses, optimization of extraction conditions.
- General characterization and purification of the isolated compounds.
- Modification of the algal polysaccharides samples by chemical, enzymatic or ultrasonic treatment and characterization of the preparations by structural analysis and chromatographic methods.
- Characterization of the rheological and optical properties of the obtained biomaterials.
- Screening the samples for antioxidant, anticoagulant, anti-inflammatory, antimicrobial activities.

The main analytical/instrumental methods used in the project are: multidetector HPLC, HPLC-MS, preparative chromatography, GC-MS/FID, NMR, FTIR, FT-Raman, spectrophotometry, fluorimetry, dynamic rheometry, ultrafiltration techniques, coagulometry.

More information about Analytical Biochemistry PhD programme: tlu.ee/en/analytical-biochemistry