

STSM Abstract

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Title of STSM: Biochemical characterization of *Ulva* biomass: looking for bioactive compounds, particularly healthy lipids for food and feed applications.

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Algae support marine ecosystems as primary producers and are known to contain valuable compounds, such as lipids, that have a high nutritional value. Despite this, the lipid composition of algal species from the Maltese Islands has never been studied previously.

Algal samples were provided by the Applied Phycology Lab at the University of Malta, where they are being characterised using a molecular genetics approach. This STSM was carried out at the Lipidomics Laboratory at the University of Aveiro, during which extraction of lipids and their identification via a mass spectrometry-based approach (GC-MS and LC-MS), allowed the elucidation of the fatty acid composition of *Ulva* spp. from the Maltese Islands. This fatty acid profile revealed the presence of saturated, monounsaturated and polyunsaturated fatty acids, including several fatty acids known to be beneficial to humans. The lipidome of *Ulva* spp. allowed for the identification of glycolipids, betaine lipids, phospholipids, sphingolipids and neutral lipids, including some species with potential bioactive properties.

This STSM contributed to new scientific knowledge about the lipid composition of *Ulva* spp. from the Maltese Islands. Future publications will consider the application and nutritional value of *Ulva* for human consumption and animal feed and the potential bioactive properties of these lipids.