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Therapeutic and nutraceutical potential of marine macroalgae: Benefits to human health

Ana Marta Gonçalves

University of Coimbra, Portugal

At the last decade increased the interest and search for new natural compounds from marine biodiversity to discover novel bioactive substances. It is expected that many naturally bioactive marine compounds with novel structures and bioactivities may be found among marine metabolites. Furthermore, due to increasing global population, securing nutritious and secure food supply is paramount. The production in food products should raise in 60%, being crucial to maintain the high nutritional composition and quality of food products. Still, with the constant and aggravated depletion of our natural environments, such as water and soils supplies, the foundations of our food production are compromised.

There is a demand for alternative food sources, that as well envision a sustainable way for the exploration of these foundations in which our food productions lie. In that scenario, there is a great interest in macroalgae biomass and resource exploration with a substantial body of evidence supporting macroalgae nutritious potential. Marine macroalgae produce significant amounts of primary and secondary metabolites that present a wide variety of bioactive properties, including antioxidant, antiviral, antimicrobial, antitumoral, anti-inflammatory, anti-aging or immunomodulatory potential, with also antibiotic properties.

These molecules are promising candidates for many possible applications such as in pharmaceutical, nutraceutical, cosmetic and medicine areas but also in agriculture or feeding. These applications may promote several benefits to humans' daily life, and so to a better quality of life. Still, some substances may be poisonous to humans and to other organisms, or become toxic upper to a certain quantity. In this

topic will be focused the marine macroalgae benefits, applications in industrial sector and therapeutic potential, with special attention in food industry and nutraceutical potential, highlighting novel recipes developed in project MENU.

Recent Publications

1. Ana Marta Gonçalves and Silvia Lomartire -Novel Technologies for Seaweed Polysaccharides Extraction and Their Use in Food with Therapeutically Applications September (2022) *Foods* 11(17):2654 doi:10.3390/foods11172654
2. Ana Marta Gonçalves and Manuel A Coimbra et All Seaweed in Food Industries: Raw Materials, Processing, Formulations, Packaging November (2022) doi:10.2174/97898150518721220100200

Biography

Ana Marta Gonçalves has her expertise in biosafety and the valorisation of marine resources and their applications in the industrial sectors, such as food, pharmaceutical and in agriculture. Sustainable and healthy food products from marine resources (seaweed) are developed for a premium diet with appropriate nutritional balance and potential functional benefits based on a circular economy production. Her studies also focus in biochemical pathways and the impacts of stressors in aquatic species to assess and improve the health status of the ecosystems and wellbeing. Biomarkers tools are used to assess the individuals' body condition, monitoring water changes and management of aquatic systems. Ana Marta Gonçalves holds various administrative and science management positions in international networks giving her vast experience in this area. During her research career obtained several grants in highly international competitive calls, including MARS award for young scientists funded by The Royal Netherlands Institute for Sea Research (NIOZ)

e: amgoncalves@uc.pt