Valorization of Macroalgae as a Natural Source of Valuable Bioactive Compounds

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In light of the SDGs 2030 agenda, researchers at the University of Aveiro are focused on exploring seaweed as a sustainable source of compounds with applications in multiple fields.

So far, we have extracted several bioactive compounds such as polysaccharides, phlorotannins or fucoxanthin, and found that they can exert interesting anti-inflammatory activities through inhibition of the NF-kB signaling cascade [1], activate apoptosis in tumor cells [2], modulate gut microbiota growth and promote short-chain fatty acid production in the gut [3]. Moreover, we showed that encapsulation is a viable approach to ensure the proper delivery of compounds such as phlorotannins in the gastrointestinal tract [4] while simultaneously cloaking eventual undesirable sensorial characteristics of the seaweed.

Additionally, and considering the challenges of the modern agrifood sector in moving towards sustainable and eco-friendly practices while simultaneously dealing with climate change, we are seeking ways to use seaweed extracts as crop biostimulants. Thus far, we have demonstrated their promising drought-protective effects. The work of our multidisciplinary team has already led to relevant findings, ultimately demonstrating that sourcing compounds from seaweed is a plausible strategy to tackle several SDGs simultaneously, and contribute to a world where we can live better together.

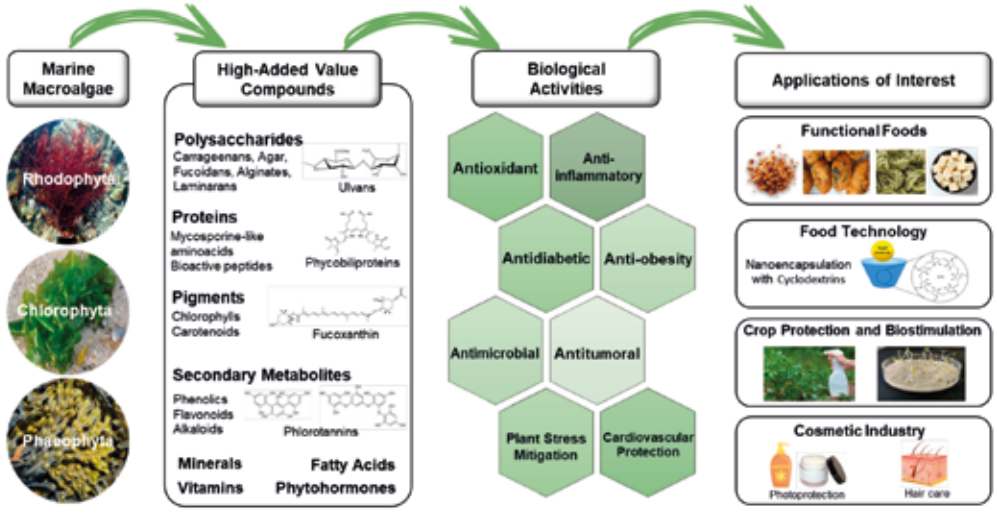

FIGURE 1
Schematic representation of the variability of compounds that can be obtained from macroalgae, their bioactive properties and potential applications.

References

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