Nutritional and health promoting perspectives of *Monostroma* spp. (Chlorophyta): A systematic review

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| Abstract | Green seaweeds, particularly species of the genus Monostroma, have gained recognition for their health-promoting potential, attributed to their rich content of polysaccharides, polyphenols, carotenoids, flavonoids, vitamins, and macro- and micronutrients, all of which show a wide range of bioactive properties. This review encompasses a total of 72 articles, selected in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The compounds present in Monostroma spp., in addition to their nutritional and chemical compounds, are associated with a number of health-promoting activities. However, it is notable that among the literature reviewed for bio-functionalities, a considerable proportion of studies were conducted in vitro (66%), followed by in vivo studies (29%), with clinical trials accounting for a much smaller fraction (5%). The mechanisms underlying the health-beneficial effects in biological systems require further indepth exploration and characterization to facilitate future translational research leading to clinical trials. These clinical trials are an essential step in advancing seaweed-based functional food ingredients into the industrial realm. As of now, research focusing on bioactive compounds derived from Monostroma is relatively scarce. This review serves as a resource, offering insights into the nutritional and functional properties of Monostroma species. It can be a valuable tool for food scientists and engineers as they embark on future research involving Monostroma and the development of seaweed-based food and nutraceutical products. |
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