

HIGH MOLECULAR WEIGHT ANTIOXIDATIVE COMPOUNDS FROM MARINE MACROALGAE

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Marine macroalgae produce a wealth of different compounds with antioxidative potentials. Particularly the superoxide scavenging activities of polysulphated polysaccharides from different sources has been investigated. Fucoxanthins are heat stable antioxidants, able to effectively scavenge superoxide anions. This is in addition to, and independent from their other effects, such as anti-coagulant activities. Different molecular fucoxanthin species with different superoxide-scavenging efficiency can be isolated with high yield, dependent on source material and purification method. Specific luminescence assays are employed to reliably quantify their antioxidative activities. Pure and well characterized fucoxanthins may have the potential to serve many different pharmaceutical and clinical applications. They may, for example, alleviate inflammatory symptoms caused by the formation of superoxide. Current cooperative projects implicate the screening of macroalgae from the Baltic Sea for fucoxanthin abundance. Thereby molecular weight distributions, superoxide-scavenging activities, long-term stability, and optimisation of purification protocols are in the focus of our research.