Polysaccharides of Marine Microalgae and its Ability to Adhere to Pathogenic Bacteria

Machado, T. W. M., Duarte, M. E. R., Noseda, M. D.

Departamento de Bioquímica e Biologia Molecular-UFPR, Curitiba-PR

Microalgae are microorganisms capable of producing different types of polysaccharides, according to the division or class to which they belong. Various biological activities were assigned to polysaccharides, recently its binding capacity to pathogenic bacteria was described. They act by blocking bacterial adhesion to host mucosa preventing the development of disease. In the present work we evaluated the binding capacity of polysaccharides obtained from microalgae of the genus *Pavlova*. The dry biomass of microalgae was submitted to sequential aqueous and alkaline (NaOH 0.5 M) extractions (2 g%) both at 80°C for 2 h. The extracts were treated with ethanol (3 V), centrifuged to yield the precipitated fractions PAQ and PAL, respectively and the soluble-ethanol fractions PAL-SE, PAQ-SE, respectively. These fractions were submitted to chemical and spectroscopic analysis for determination of polysaccharide chemical structure. In addition, the extracts were *in vitro* tested for their ability to bind to pathogenic bacteria (*Salmonella thyphimurium*). As positive control we used BioMos® (commercial product produced from yeast with high binding capacity). Our results indicate that the crude fractions obtained from microalgae have a high potential activity mainly those composed by β-(1→3)-linked glucans, that showed the highest binding capacity to enteropathogenic bacteria.

Keywords: Polysaccharides; Binding capacity; Pathogenic bacteria; Microalgae.

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