

Extraction and Identification of Polysaccharides from Marine Microalgae *Tetraselmis gracilis* (Chlorophyta) and *Thalassiosira fluviatilis* (Bacillariophyta)

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Tetraselmis gracilis and *Thalassiosira fluviatilis* are marine microalgae that have widespread use in aquaculture. With the development of this sector of the economy, the spread of diseases is a main problem for this industry all around the world. For this reason the search for foods or supplements with immunostimulating properties is of great interest. β -glucans, such as those found in some species of fungi and marine microalgae, have known immunostimulating properties. The aim of this study was to determine the optimal extraction conditions and identification of the polysaccharides produced by the before-mentioned marine microalgae for a future study of their immunomodulator activities. The culture medium used for the growth of these microalgae was Guillard f/2 modified at GIA/UFPR. Both microalgae were submitted to different extraction conditions, testing the effect of pH, temperature and time in the yield of extraction. For the green microalgae *T. gracilis*, aqueous extraction at 80°C for 2 h was chosen. The supernatant was treated with ethanol (3v) originating fraction TeQ, which yielded 7.5%. The diatom *T. fluviatilis* was submitted to acid extraction with H₂SO₄ 0.05 M at 60°C for 10 min. The supernatant was dialyzed yielding fraction TaC (13%). Chemical analyses and monosaccharide composition showed that both fractions are constituted by carbohydrates and that glucose is the main sugar. NMR spectroscopy indicates that TeQ is an α -glucan (1 \rightarrow 4)-linked, while TaC is a β -glucan (1 \rightarrow 3)-linked. Both polysaccharides are under analysis to determine their immunomodulator potential.

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