

Polysaccharides From Subaerial Green Microalga *Trentepohlia arborum*.

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The microalga *Trentepohlia arborum* belongs to the order Trentepohliales, which is still a poorly studied group of subaerial green algae widespread in regions with humid climates (most abundant and diverse in the tropics) and growing on rocks, buildings, tree bark, leaves, stems and fruits. Moreover, they can also be found growing in close association with fungi, forming lichens. This study deals with the purification and chemical characterization of polysaccharides extracted from a free-living sample of the microalga *T. arborum*. It was found growing on rocks, in the margin of BR-277 highway. The collected material (23g) was submitted to sequential extraction with ethanol, CHCl₃ – MeOH (1:1, v/v), water (100°C, 3.3% yield, fraction TW) and 10% aq. KOH (100°C, 9.2%, fraction TK). The liberated polysaccharides were precipitated by ethanol (3 vol.), dissolved in water, dialyzed and then freeze-thawed. This treatment furnished supernatants (STW and STK) and precipitates (PTW and PTK). Fraction STW showed the presence of rhamnose (4.2%), fucose (1.3%), arabinose (7.4%), xylose (5.1%), mannose (18.1%), galactose (41.4%) and glucose (21.3%). When analysed by HPSEC, this fraction showed the presence of many peaks, indicating the presence of a mixture of polysaccharides. This fraction is being purified through Fehling precipitation and ultrafiltration (membranes with cut-off in the range 10-300kDa) methods. Since this microalga is also found in nature in the symbiotic state (lichens), a further objective will be to compare the structures of the polysaccharides found in this study with those found in a lichenized *T. arborum* sample, in order to amplify the knowledge about carbohydrate chemistry in lichen symbiosis.

Keywords: polysaccharides, *Trentepohlia arborum*, microalga