

THE ORIGIN OF POLYSACCHARIDES IN THE *TELOSCHISTES FLAVICANS* SYMBIOSIS

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A structural characterization of polysaccharides extracted from the aposymbiotically cultured mycobiont and photobiont of the lichen *Teloschistes flavicans* was carried out in order to determine whether the polysaccharides previously found in the symbiotic thalli are produced by the mycobiont, photobiont or both. The mycobiont was cultured on a solid Lilly and Barnett medium and the resulting colonies were freeze dried, defatted and their polysaccharides extracted successively with 2%, 10% and 30% aq. KOH, each at 100°C. The extracts were neutralized (HOAc) and purified, giving rise to homogeneous fractions, PFSK2 from 2% KOH, which contained a (1→4),(1→6)-linked α -glucan (1:1 ratio, pullulan), fraction PK10 from 10% KOH, which was a (1→3)-linked linear β -glucan (laminaran), and fraction PK30 from 30% KOH, being a branched (1→3),(1→6)-linked β -glucan. The photobiont (*Trebouxia* sp.) was cultured in liquid nutrient medium, and after purification, a linear 5-O-substituted β -galactofuranan was characterized, which is similar to that previously found in the isolated photobiont *Trebouxia* sp. of *Ramalina gracilis*. In contrast to the glucans, which have been previously found in the symbiotic thallus, showing that the fungus alone produces them without participation of the photobiont, the galactofuranan and the laminaran were not present in the thallus.

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