

Further Investigations on the Polysaccharides Obtained from the Stems and Caps of *Macrocybe titans*

Carbonero, E. R.^a; Ruthes, A. C.^a; Waihrich, L. G.^a; Amazonas, M. A. L. A.^b; Gorin, P. A. J.^a; Iacomini, M.^a

^a Departamento de Bioquímica e Biologia Molecular, Universidade Federal do Paraná, UFPR, C.P. 19046, CEP 81531-990, Curitiba, PR, Brasil; ^b Centro Nacional de Pesquisa de Florestas, EMBRAPA-Florestas, Caixa Postal 319, CEP 83411-000, Colombo, PR, Brasil

e-mail: lariwaihrich@hotmail.com

The giant mushroom *Macrocybe titans* have drawn the attention on account of their food potential. A chemical analysis was carried out on its stems and caps, in order to determine their carbohydrate structures. Each portion was extracted with $\text{CHCl}_3\text{-MeOH}$ and then $\text{MeOH-H}_2\text{O}$ to remove low-molecular weight compounds. Each resulting residue was submitted, successively, to aqueous extraction (x 6) and 2% aq. KOH (x 6) at 100°C , and the extracted polysaccharides, which were recovered by ethanol precipitation (WP, KP, WS, and KS fractions), were dialyzed against tap water for 24 h, and freeze-dried. The polysaccharide fractions were then submitted to purification procedures by freeze-thawing to give insoluble (I- WP, I-KP, I-WS, and I-KS fractions) and water-soluble fractions (S-WP, S- WS, S- KP, and S-KS fractions). According to the GC-MS analysis of derived alditol acetates, all the insoluble-water fractions had glucose as its main monosaccharides, while those of soluble fractions were Gal, Glc, Fuc, and Man. Due to their similarity, as shown by GC-MS and $^{13}\text{C-NMR}$, the soluble fractions obtained from stems (S-WS, S-KS) and caps (S-WP, S-KP) these were combined, furnishing fractions SW and SK. SW and SK fractions were treated with Fehling solution, giving supernatants (FS-SW and FS-SK) and precipitates (FP-SW and FP-SK). FS-SW, FS-SK and FP-SK fractions had Glc as their main monosaccharide while FP-SW contained Fuc, Man, Gal and Glc. The $^{13}\text{C-NMR}$ spectrum of the FP-SK fraction showed six main signals (δ 103.2, 76.1, 75.3, 73.4, 70.2, and 69.2, corresponding to C-1, C-3, C-5, C-2, C-4, and C-6) of a β -(1 \rightarrow 6)-linked glucan. Fractions FP-SW, FS-SW, and FS-SK gave rise to heterogeneous (HPSEC), so that they are been purified by ultrafiltration membranes (300, 30 and 10 kDa Mr cut-offs). Additional structural studies of these fractions are being carried out by the above methods.

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