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

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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 $CHCl_3$-MeOH and then MeOH-H_2O to remove low-molecular weight compounds. Each resulting residue was submitted, successively, to aqueous extraction (x 6) and 2% aq. KOH (x 6) at 100ºC, 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}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}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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