Characterization of exopolysaccharides produced by *Agaricus brasiliensis* in submerged fermentation

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Edible mushrooms have been widely used for countless years and unfold several biological properties, as immunomodulatory, hypoglycemic, anti inflammatory, antioxidant, antiatherogenic, antibacterial, antifungal, antiviral and antitumor activities. Among active molecules there are the exopolysaccharides (EPSs), which can be obtained by submerged fermentation of the mycelium in laboratorial conditions. The aim of this work was to study *A. brasiliensis* EPSs. The LPB03 strain of *A. brasiliensis* was cultured in basal medium containing glucose, yeast extract and salts (pH 6.0) at 30 ºC and 120 rpm for 168 h. The mycelia biomass was isolated from the medium by filtration using Whatmann paper. The supernatant was submitted to precipitation with ethanol (2v) and the EPSs were recovered by centrifugation (4000 rpm for 15 minutes), resuspended in water, dialyzed (cutoff of 12-14 KDa) and freeze dried (48.8% yield). The EPSs (22.3% of protein and 61.2% of carbohydrates) analysis in GC-MS revealed mannose as the main sugar, followed by galactose, glucose, xylose, ribose and arabinose (65.5, 17.5, 13.1, 1.8, 1.3 and 0.8 mol%, respectively), a typical composition of galactomannans. The 13C-NMR spectrum of EPSs showed anomeric signals (ppm) corresponding to D-mannopyranosyl units substituted (102.3) or not (101.0) at C-2, as well as an intense signal at 61.7, corresponding to C-6 of non-reducing end of D-mannopyranosyl units. Besides, signals at 98.7 and 78.7 could be attributed, respectively, to C-1 and C-2 of D-galactopyranosyl 2-substituted. It is known that β-D-mannan molecules shows antitumor activity, therefore EPSs of *A. brasiliensis* will be further investigated against Walker 256 tumor.

Word Keys: *Agaricus brasiliensis*, Exopolysaccharides, Mannans

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