

Título: EFFECT OF EXTRACTIVE FRACTIONS OF *Pleurotus sajor-caju* MYCELIUM ON GUT MICROBIOTA OF MICE

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Abstract:

Polysaccharides from fungi of the Basidiomycetes class have been widely used for their medicinal and nutritional properties. Depending on the fungal culture conditions and the method of extraction of the polysaccharidic fraction, polysaccharides with different structures, and hence with different bioactivities, can be produced. These polysaccharides can both act as antimicrobial or as prebiotic, stimulating the growth of microorganisms. This study evaluated the in vivo effect of polysaccharidic fractions extracted from the mycelium of *Pleurotus sajor-caju* on the intestinal microbiota of Swiss Albino male mice. Fraction S2 was obtained by heating an aqueous suspension of the mycelium at 100°C followed by the precipitation of the polysaccharidic fraction with ethanol and the lyophilization of the precipitated. Fraction S3 was obtained by the same way followed by a deproteinization process. The fractions were administered by gavage at concentrations of 10, 30 and 60 mg kg⁻¹. The animals were divided into 5 groups: control group (C) consisting of 24 animals which were fed with carboxymethyl cellulose solution; S2 group, which received the extractive fraction of the mycelium of *P. sajor-caju* and S3 group, which received the extractive fraction of mycelium submitted to a deproteinization process. Mice feces were collected at 0, 14, 28 and 56 days and evaluated for the presence of bifidobacteria, lactobacilli and enterobacteria by the plate count technique using culture medium proper for each microorganism. Results showed that, compared to control, S2, at a dose of 60 mg kg⁻¹, increased the growth of bifidobacteria in 146.3% at the 28th day. The growth of lactobacilli was also stimulated in 72.6% in the 56th day by using S3 at a dose of 10 mg kg⁻¹. These results from the in vivo tests suggested that both extractive fractions of *P. sajor-caju* mycelium have potential use as prebiotic.

Key-words: *Pleurotus sajor-caju*, *Lactobacillus* spp, *Bifidobacterium* spp, *Enterobacter* spp, prebiotic, polysaccharides

Funding agency: Fundo de Apoio à Pesquisa (FAP) - UNIVILLE