Antitumor Activity of Exopolysaccharide of *Agaricus brasiliensis* in vivo in Wistar Rats Bearing Walker 256 Tumor

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**Introduction:** The exopolysaccharide (EPS), extracellular polysaccharide produced by some fungi and bacteria, consist in highly ordered structures, composed mainly by β-glucan units, with several medicinal properties, such as immunostimulant activity, antioxidant, anti-inflammatory and antitumor. These pharmacological properties are also associated the presence of proteoglycans and heteroglucans compounds such as glucomannans, manogalactoglucans and riboglucans. **Materials and Methods:** A strain of *Agaricus brasiliensis* was cultivated in standard medium composed of glucose, yeast extract and salts (pH 6.0) at 30º C and 120 rpm/7 days. The mycelial biomass was isolated from the cultivation broth by filtration and the supernatant submitted to precipitation with ethanol (2v). The EPS was separated by centrifugation, resuspended in water, dialyzed (12-14 KDa) and lyophilized. The analysis of tumor reduction was realized by calculating the tumor volume and tumor reduction of Wistar rats bearing Walker 256 tumor injected with 16 consecutive doses of EPS (10mg/kg animal/day). **Discussion and results:** The EPS of *A. brasiliensis* produced by submerged fermentation showed an important antitumor action, reaching 46.2% inhibition compared to the control group. **Conclusion:** The antitumor activity observed in animals undergoing treatment with EPS of *A. brasiliensis* reflects the immune response promoted by various polysaccharides, resulting from their own interaction with receptors in different cell types of the immune system. This suggests that this interaction results in an activation of both cellular and molecular level, through the liberation of cytocins and chymosins. The activated macrophages, Natural Killer cells and lymphocytes represent the mainly route of effector cells that destroy neoplastics cells by the phagocytosis and/or release of cytotoxic granules.

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