Effect of glucan from the mushroom *Caripia montagnei* and PPAR-α agonists on inflammatory process

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Peroxisome proliferator-activated receptors (PPARs) are transcription factors belonging to the family of nuclear receptors that bind themselves to specific agonists and have shown their importance in controlling the inflammatory process. The aim of this study was to perform a chemical characterization of glucan extract from the mushroom *Caripia montagnei*, assessing any anti-inflammatory effect and determining if this effect occurs via PPARs. This mushroom was delipidated with organic solvent. After proteolysis, the aqueous solution was purified with methanol and was found to contain carbohydrates (98.7±3.3%) and protein (1.3±0.25%). Infrared spectroscopy, nuclear magnetic resonance (NMR) demonstrated that *C. montagnei* is high level of ß-glucans. In thioglycolate-induced peritonitis, the glucans from *C. montagnei* (50 mg/kg) reduced the inflammatory infiltrate by 75.5±5.2%, as compared with the reduction pharmacological ligands of the peroxisome proliferator-activated receptor (PPAR-a) Wy-14643 (60.3±6.1%), PFOA (37.8±2.8%) and clofibrate (52.2±3.2%). In an assay for inhibition plantar edema, glucans from *C. montagnei* (50 mg/kg) and L-NAME, the nitric oxide synthase inhibitor, reduced to a similar degree of 91.4±0.3%. In all groups tested, nitric oxide (NO), an inflammation mediator, showed a significant reduction in peritoneal exudates levels in comparison with control (carrageenan). The *C. montagnei* glucans did not show cytotoxicity in the several concentrations tested measured by MTT in periferic mononuclear cells. *C. montagnei* glucans show great potential for anti-inflammatory applications.

Keywords: Anti-inflammatory; *Caripia montagnei;* Mushroom; PPAR.

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