

## **Effect of a polysaccharidic fraction of *Agaricus blazei* on colorectal carcinogenesis in rats with ulcerative colitis**

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The polysaccharidic fraction of *Agaricus blazei* (ATF) had been reported to show antitumoral and immunostimulant activities. In this work we studied the effect of ATF on chemical carcinogenesis associated with ulcerative colitis. Colon cancer was induced by inoculation of dimethylhydrazine (DMH) (40 mg/Kg - 4 sc doses) in the two first weeks and ulcerative colitis was induced in the fourth week by acetic acid solution (5% - 1.5 ml, intrarectal). ATF was obtained by ammonium oxalate extraction and administered at 5 or 25 mg/Kg (ip) three days before and two times after colitis induction. Colon ( $\pm 6$  cm) was removed, fixed and stained (Leishman) for counting the aberrant crypt foci (ACF) and evaluation of lesion index. Segments of 3 cm (distal and proximal) were cut and stained (HE) for histopathological analysis and evaluation with an image analyzer software (KS-300). Administration of 5 mg/Kg of ATF decreased the number of ACF with three or more aberrant crypts ( $5.30 \pm 4.27$  to  $1.20 \pm 0.63$ ). However, this treatment increased the lesion index when the chemical carcinogenesis was associated with ulcerative colitis

( $0.48 \pm 0.35$  to  $1.21 \pm 0.92$ ). DMH did not influence ulcerative colitis induced by acetic acid and ATF was also not able to interfere with these lesions. On the other hand, treatment with 5 mg/Kg of ATF increased the relative area of colon with lesions in the animals inoculated with DMH and acetic acid ( $9.32 \pm 6.46$  to  $25.37 \pm 17.63$ ). In general, both parameters were higher in the rectal segment. In our conditions, ATF decreased ACF development, and increased the lesion index and the percentage of lesioned area, suggesting that its prophylactic potential depends on its ability to promote a highly acute inflammatory reaction.

Key words: *Agaricus blazei*, chemical carcinogenesis, colon aberrant crypt, dimethylhydrazine, ulcerative colitis