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 IN AMBITO BIOMEDICO



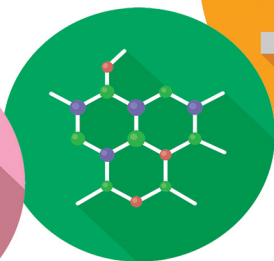
BIOINFORMATICA
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Protective effects of Aphanizomenon Flose-Aquae (AFA) extract on experimental colitis in rat

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BACKGROUND AND AIM: Inflammatory bowel diseases (IBD) are chronic immune disorders, which necessitate long-term dependence on powerful drugs. Recently, the use of natural product-based therapies has emerged as a promising intervention for IBD. Aphanizomenon flose-aquae (AFA) is a unicellular blue-green microalgae, traditionally used for its health-enhancing antioxidant and anti-inflammatory properties; we aimed to evaluate its protective effects on animal model of experimental colitis.

Colitis was induced in rat by intracolonic instillation of 15 mg of 2,4-dinitrobenzene sulfonic acid (DNBS). Rats received AFA (100 mg/kg/d) by oral route, 4 days before and 6 days after colitis induction. The effects of AFA on DNBS-induced colitis were evaluated by assessment of macroscopic, microscopic signs of colitis and by biochemical assay of the markers of inflammation.

Obvious reduction of body weight, loose faeces/ diarrhoea, increase in colon weight/length ratio, colonic inflammation, mucosa injuries and increase in myeloperoxidase levels were observed in DNBS- groups. AFA pre-treatment improved body-weight, stool consistency, and colon shortening as well as attenuated the extent of colonic damage, likely protecting the mucosal epithelium. Colonic histopathological changes, cellular neutrophil infiltration and the subsequent increase in colonic myeloperoxidase levels induced by DNBS, were also reduced after AFA administration. AFA treatment was ineffective in control group.

The present study, for the first time, shows the protective effects of AFA extract on DNBS-induced colitis in rats. Further studies could be addressed to evaluate if Blue-green alga AFA could be used as nutraceuticals in the treatment of the IBD.