

Use of *Amaranthus Roxburghianus* Root Extract in the Treatment of Ulcerative Colitis in Mice

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Abstract : The present work was undertaken to determine the effects of *Amaranthus roxburghianus* Nevski. (Amaranthaceae) root alone and in combination with piperine in treating ulcerative colitis (UC) in mice. Swiss albino mice were divided into seven groups (n = 6). Standard group received prednisolone (5 mg/kg, i.p.). Treatment groups received hydroalcoholic extract of roots of *A. roxburghianus* (50 and 100 mg/kg, p.o.) and a combination of hydroalcoholic extract of roots of *A. roxburghianus* (50 and 100 mg/kg, p.o.) and piperine (5 mg/kg, p.o.). Ulcer index, colitis severity, myeloperoxidase (MPO), malondialdehyde and glutathione were estimated from blood and tissue. Column chromatography of the extract was done and purified fractions were analyzed by gas chromatography-mass spectroscopy (GC-MS). Treatment with the combination of hydroalcoholic extract of *A. roxburghianus* and piperine showed minimal ulceration, hemorrhage, necrosis and leucocyte infiltration by histopathological observation. Acetic acid increased MPO levels in blood and colon tissue to 355 U/mL and 385 U/mg, respectively. The combination of hydroalcoholic extract (100 mg/kg) and piperine (5 mg/kg) significantly decreased MPO in blood and tissue to 182 U/mL and 193 U/mg, respectively. Similarly, this combination significantly reduced MPO and increased glutathione levels in blood and tissue. Various phytoconstituents were detected by GC-MS. The combination of hydroalcoholic extract and piperine is effective in the treatment of UC and the effects are comparable with the standard drug prednisolone. 4H-pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl, eugenol and benzene, and 1-(1,5-dimethyl-4-hexenyl)-4-methyl are reported having analgesic, anti-inflammatory, and antioxidant properties; they may play a role in the biological activity of *A. roxburghianus* root.

Keywords : *Amaranthus roxburghianus*, ulcerative colitis, anti-inflammatory, ulcerative colitis

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