

## Preliminary Assessment for Protective Effect of *Rhodiola rosea* in Chemically Induced Ulcerative Colitis

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**Abstract :** *Rhodiola rosea* L. (Crassulaceae) is commonly known as golden root or rose root. It is a perennial herbaceous plant and most investigated species of the genus *Rhodiola*. *Rhodiola rosea* contains flavonoids, terpenoids, phenylpropanoid glycosides and phenylethanol derivatives in the roots of the plant. The objective of present study was to investigate the protective effect of hydroalcoholic extract from *Rhodiola rosea* roots in DSS induced colitis in mice. The ulcerative colitis was induced by DSS (3%, w/v) in mice and estimated weight loss and stool consistency. Various parameters including Colon length, spleen weights and ulcer index were also measured. The histological observations were observed by H&E staining. Effect of hydroalcoholic extract on various antioxidant parameter of rat colon such as tissue myeloperoxidase (MPO), reduced GSH, SOD concentrations and lipid peroxidation were determined. Pro-inflammatory mediators, such as tumour necrosis factor- $\alpha$  (TNF- $\alpha$ ) and nitric oxide (NO) were determined by ELISA. In DSS induced group, mice body weight decreased gradually as compared to the control group. Redness and edema were observed in the colons intensely and scores representing inflammation in this group. The extract treated showed with tissue levels of TNF- $\alpha$ , IL-6 and MPO activity were significantly ( $p < 0.05$ ) increased. The mice treated with higher doses of hydroalcoholic extract (300 mg/kg) significantly reduced the activity compared with standard drug sulfasalazine (100 mg/kg. B.wt). Conclusion: Results of this study were suggested that the efficacy of hydroalcoholic extract, especially at the higher dose, was similar to that of standard drug, which concerned its potential application as a natural medicine for the treatment of ulcerative colitis.

**Keywords :** phenylpropanoid, *Rhodiola rosea*, sulfasalazin, ulcerative colitis

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