Sakthivel K M et al., J Gastrointest Dig Syst 2015, 5:4
http://dx.doi.org/10.4172/2161-069X.S1.029

OMICS International
conferenceseries.com

International Conference and Exhibition on
Gastrointestinal Therapeutics
August 25-27, 2015 Valencia, Spain

Amentoflavone from *Biophytum sensitivum* attenuates ulcerative colitis in rats

Sakthivel K M and **Guruvayoorappan C**
Karunya University, India

Inflammatory bowel disease (IBD) encompasses chronic inflammatory condition of intestine which includes ulcerative colitis (UC) and Crohn's disease (CD). UC is an idiopathic inflammatory disorder characterized by oxidative stress, leucocyte infiltration and up-regulation of pro-inflammatory cytokines. The present study examines the effect of aerial parts of *B. sensitivum* and amentoflavone on a murine model of ulcerative colitis. UC was induced by intracolonic injection of 3% acetic acid in Wistar rats. *B. sensitivum* (50 or 100 mg/kg.b.wt), amentoflavone (10 mg/kg.bwt) or reference drug sulfasalazine (100 mg/kg.b.wt) was administrated intra-peritonealy for 5 consecutive days before induction of colitis. In the present study, we demonstrated for the first time that the administration of *B. sensitivum* (50 mg/kg.b.wt) and amentoflavone (10 mg/kg.b.wt) was found to inhibit colitis by lowering macroscopic score (up to 3.66±0.77) as well as significant reduction in lactate dehydrogenase (LDH) ($p < 0.01$) and myeloperoxidase (MPO) activity ($p < 0.01$). Furthermore, significant reduction ($p<0.01$) in mucosal content of lipid peroxidation (LPO), glutathione (GSH), superoxide dismutase (SOD) and nitric oxide (NO) confirms that amentoflavone and *B. sensitivum* could significantly inhibit colitis. The study showed significant reduction ($p < 0.01$) in colonic tumor necrosis factor-alpha (TNF-α), Interleukin-1-β (IL-1β) and IL-6 levels as well as the expression of inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (COX-2) after treatment compared to colitis control group. The histopathological study also confirms the foregoing findings. Treatment with Amentoflavone and *B. sensitivum* was also able to inhibit the activation and translocation of transcription factors, nuclear factor (NF)-κB subunits (p65/p50). These results suggests that amentoflavone from B.sensitivum exhibits protective effect in acetic acid-induced ulcerative colitis which might be due to its modulation of oxidant/anti-oxidant balance, down-regulation of productions and expressions of pro-inflammatory cytokines, inflammatory mediators and inhibition of NF-κB signal transduction pathways.

Biography

Sakthivel K M is pursuing his PhD in Biotechnology from Karunya University in India and he finished his Master's studies from Bharathiar University, India. He has received many honors and young scientist award from Association of Biotechnology and Pharmacy (ABAP), India. He has received prestigious Junior as well as Senior Research Fellowship from Department of Biotechnology (DBT), Department of Science and Technology (DST) as well as Indian Council for Medical Research (ICMR), Government of India. His doctoral work mainly involves investigation of natural therapeutics against Ulcerative colitis (Inflammatory Bowel Diseases). He has published more than fifteen publications in peer reviewed international journals.

sakthikm@gmail.com

Notes: