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Comparative anti-inflammatory activities of Sulfasalazine alone and combination with *Scutellariae radix* and *Bupleuri radix* mixture on DSS-induced colitis mice model

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Sulfasalazine commonly used in Ulcerative Colitis (UC), potentially has various adverse effects after high dosage and long term intake. The present study aimed to investigate the comparative evaluation of pharmacological efficacy between Sulfasalazine alone and combination with herbal medicine on Dextran Sodium Sulfate (DSS)-induced UC in mice. To induce UC, Balb/c mice were treated 5% DSS water solution for 7 days. Animals were divided into five groups (n=9); Group-1: Normal group; Group-2: DSS control group; Group-3: DSS+sulfasalazine (30 mg/kg); Group-4: DSS+sulfasalazine (60 mg/kg); Group-5: DSS+sulfasalazine (30 mg/kg)+*Scutellariae radix* and *Bupleuri radix* mixture (30 mg/kg) (SSB). The anti-oxidant, inflammatory and apoptotic protein levels were determined using western blotting. DSS-treated mice developed symptoms similar to those of human UC, such as severe bloody diarrhea and weight loss. SSB supplementation, as well as sulfasalazine suppressed colonic length shortening and mucosal inflammatory injury. In addition, significantly reduced the expression of pro-inflammatory signaling molecules through suppression of both Mitogen-Activated Protein Kinases (MAPK) and Nuclear Factor-kappa B (NF- κ B) signaling pathways and prevented the apoptosis of colon, moreover, SSB significantly up-regulated antioxidant enzymes including SOD and catalase. This is the first report that *Scutellariae radix* and *Bupleuri radix* mixture combined with sulfasalazine protects against experimental UC via the inhibition of both inflammation and apoptosis, very similar to the standard-of-care sulfasalazine. We conclude that SSB can provide better treatments for UC than sulfasalazine alone or may be useful as an alternative treatment strategy for UC, without evidence of side effects.

Biography

Su Ji Kim has lectured and studied Pharmacology and Toxicity in Korean Medicine at Daegu Haany University, Republic of Korea. In addition to natural drug research, he is also focusing on research on functional food ingredients and natural cosmetic materials. Presently he is the Editor-in-Chief of *The Korea Association of Herbology* and serves as an Academic Member and Editor of internationally renowned journals.

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