

The Protective Effects of Naringenin on Iodoacetamide-Induced Ulcerative Colitis in Rats

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Abstract : Naringenin is a flavanone, a type of flavonoid, found in fruits such as grapefruit, oranges, and tomatoes, was found to possess antioxidant, anti-inflammatory and antitumor effects. The present study was conducted to investigate the protective effect of naringenin on iodoacetamide-induced ulcerative colitis (UC) in rats. Male Wistar rats were pretreated with sulfasalazine (300 mg/kg, p.o.) as standard anti-inflammatory drug or naringenin (50 mg/kg, p.o.) for 7 consecutive days then UC was induced by intracolonic administration of 0.1 ml (2%) iodoacetamide dissolved in 1% methylcellulose. One week later, animals were sacrificed and the colonic tissues were dissected. Colon inflammation was evident by elevation in colon tumor necrosis factor alpha (TNF α) and interleukin-8 (IL-8) as well as inducible nitric oxide synthase (iNOS) enzyme, prostaglandin-E2 (PG-E2) and myeloperoxidase (MPO) activities. Additionally, oxidative stress was manifested by increased colon lipoperoxidation (MDA), glutathione (GSH) depletion, elevated nitric oxide (NO) content and glutathione peroxidase (GPx) activity. Pretreatment with naringenin largely mitigated these alterations. The present study reinforces the hypothetical use of naringenin as an anti-inflammatory complement to conventional UC treatment and could be considered in the dietary prevention of intestinal inflammation and related disorders.

Keywords : iodoacetamide, naringenin, sulfasalazine, ulcerative colitis

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