Gut microbiota-derived inosine from dietary barley leaf attenuates colitis through PPAR γ

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Video Byte

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Abstract

Ulcerative colitis (UC) is a type of inflammatory bowel disease characterized by the presence of lesions in the cecum and colon. UC is closely associated with the dysregulation of the gut microbiota and with altered regulation of intestinal homeostasis. A recent study sought to better understand a traditional remedy for intestinal diseases. Barley leaf (BL) has long been used in traditional Chinese medicine to promote intestinal health, but its mechanisms of action are unclear. By sequencing the gut microbiota in a mouse model of colitis, researchers found that dietary supplementation with BL improved symptoms of gut microbiota dysbiosis. Mucosal barrier functions were improved in mice treated with BL, and the anti-inflammatory receptor PPAR γ , which is often decreased in patients with UC, was more activated in mice treated with BL. Metabolically, gut microbiota had enhanced glycolysis following BL supplementation, and levels of the metabolite inosine were elevated, which could activate PPAR γ signaling in human colon epithelial cells. Although further study is needed to determine the efficacy of BL in patients with UC, these results suggest that BL may be a promising potential therapeutic strategy for the prevention and treatment of UC.