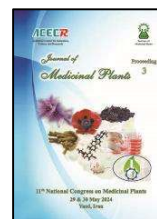




11th National Congress on Medicinal Plants

29 & 30 May 2024
Yazd, Iran



Poster Presentation ID: 147

Investigating the possible effects of isoimperatorin in an animal model of IBD induced by acetic acid

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ARTICLE INFO

Keywords:

Isoimperatorin
Irritable bowel disease
Anti-inflammatory
Ferulago trifida root

ABSTRACT

Irritable bowel disease (IBD) is a chronic disease of unknown origin that is affected by genetics, immune system and environmental factors. In this study, 80% methanolic total extract and chloroform fraction of *Ferulago trifida* roots were prepared. By means of different chromatography and spectroscopy methods, furanocoumarin compound isoimperatorin was isolated, purified and identified. In the next step, the protective effects of isoimperatorin in the colitis model induced by acetic acid were investigated. For this purpose, colitis was induced by intracolonic administration of 4% v/v acetic acid solution in male rats. The animals were divided into 6 groups with 6 mice in each group, which are: the group of healthy mice (Sham), the group of mice with colitis that received normal saline (negative control), the group of mice those with colitis who received dexamethasone at a dose of 1 mg/kg per day orally (positive control) and three groups that received orally isoimperatorin at doses of 0.1, 1 and 10 mg/kg per day. The treatment was performed for three days and after that, the condition of the colon was evaluated in terms of macroscopic, histopathological and biochemical factors. The results of the study showed that isoimperatorin significantly reduced the severity of macroscopic and microscopic colon injuries and this reduction was dose-dependent. Isoimperatorin has also been able to reduce the level of neutrophils infiltration and lipid peroxidation by reducing the levels of myeloperoxidase and malondialdehyde respectively. The anti-inflammatory activity of isoimperatorin is shown by decreasing the level of cytokines TNF- α and IL-1 β .

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