

## Quercus ilex extract ameliorates acute TNBS-Induced colitis in rats

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Description :

*Quercus ilex* L. (Fagaceae) is one of the most commonly used plants in folk medicine in the Mediterranean region to treat gastrointestinal disorders.

The aim of the present study was to evaluate the effects of a polyphenol extract from mature leaves of *Q. ilex* on acute 2,4,6-trinitrobenzene sulfonic acid-induced colitis in rats. A polyphenol extract from mature leaves of *Q. ilex* (250 and 500 mg/kg/day) was administered by gavage 48, 24, and 1 h prior to the induction of colitis with 2,4,6-trinitrobenzene sulfonic acid as well as 24 h later. The inflammation response was assessed by histology, myeloperoxidase activity, and Th1 proinflammatory cytokine production. The protein expression of cyclooxygenase-2 and inducible nitric oxide synthase, and signaling pathways were studied by Western blotting in the colon tissues. The polyphenol extract from mature leaves of *Q. ilex* decreased neutrophil infiltration, interleukin-1 $\beta$  and TNF- $\alpha$  production, and proinflammatory proteins cyclooxygenase-2 and inducible nitric oxide synthase overexpression. Also, the polyphenol extract from mature leaves of *Q. ilex* was capable of blocking the activation of mitogen-activated protein kinases and nuclear transcription factor-kappa B. Furthermore, the reduction of inflammation by polyphenol extract from mature leaves of *Q. ilex* treatment was accompanied by a recovery of Nrf2 and heme oxygenase-1 protein expression levels. In conclusion, this study demonstrates that a polyphenol extract from mature leaves of *Q. ilex* improves 2,4,6-trinitrobenzene sulfonic acid-induced colitis, probably through mitogen-activated protein kinase/nuclear transcription factor-kappa B ...

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