

Original Paper

## Effect of hydroalcoholic extract of *Ferula persica resin* on induced rheumatoid arthritis by Freund's complete adjuvant in rat

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### Abstract

**Background and Objective:** Rheumatoid arthritis is an autoimmune-inflammatory disease with possible joint destruction and disability. Persica plant, seems contain anti-inflammatory capabilities. This study was done to determine the effect of hydroalcoholic extract of *Ferula persica resin* on induced rheumatoid arthritis by Freund's complete adjuvant in rat.

**Methods:** In this experimental study, 36 male Wistar rats (200-250 g) and 8 weeks old were randomly allocated in 6 groups including normal group, positive control, negative control, and groups treated with the hydroalcoholic extract of persica resin with 25, 50 and 75 mg/kg/bw doses. The resin of persica was extracted by Maceration method. On the first day, inflammation was induced with injection of 0.2 ml of Freund's complete adjuvant into the right knee joint of rats and from the fifteenth day hydroalcoholic extract was injected intraperitoneally and daily for 15 days. On the 30<sup>th</sup> day, blood samples were taken from hearts for rheumatoid factor measurement. Histological slides were prepared from knee joint.

**Results:** The level of RF in the three treatment groups was significantly reduced compared to the negative control group ( $p < 0.05$ ). Destruction of cartilage were observed in treated group with dose of 25 mg/kg/bw in comparison with positive control group, treated group with 50 and 75 mg/kg/bw doses. Also in the negative control group, synovial hyperplasia, pannus and the destruction of cartilage were observed.

**Conclusion:** It seems that hydroalcoholic extract of *Ferula persica resin* can causes dose dependent reduction of inflammation and destruction of cartilage result from induced rheumatoid arthritis in the rats.

**Keywords:** Rheumatoid arthritis, *Ferula persica resin*, Inflammation, Knee joint

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Received 19 Jul 2017

Revised 11 Jun 2018

Accepted 11 Jun 2018