

## Original Paper

# Effect of ethanolic extract of pod *Prosopis farcta* plant on neuronal density of anterior horn following sciatic nerve compression in Rats

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## Abstract

**Background and Objective:** After axotomy or the compersion the nerve, the death of spinal cord nerves cell body occur. Compersion is one of the factors causing the degeneration of the spinal cord cell body. This degeneration is due to the reversed factors of the damaged area that have reached to cell body. *Prosopis farcta* is a member of leguminosae family and mimosaceae subfamily. The purpose of this study was to investigate the effect of ethanolic extract of pod *prosopis farcta* plant, on neuronal density of anterior horn following sciatic nerve compression in rat.

**Materials and Methods:** This experimental study was performed on thirty male wistar rats with the age of about three months years and 300-350 gr weight. The animals were divided into five groups. A) control, B) compression, C) compression + treatment with 25 mg/kg ethanolic extract, D) compression + treatment with 50 mg/kg ethanolic extract and E: compression + treatment with 75 mg/kg ethanolic extract. After anesthetizing the rats, the muscle of thigh was splited and the sciatic nerve was kept under compersion, the muscle and skin were stitched subsequently. In the experimental groups the alchoholic extract of the *prosopis farcta* was injected to the rats with 25mg/kg, 50mg/kg, 75mg/kg dosage by the intrapritoneal way weekly. After 28 days of compresion, the rat, were put under the perfusion method and some samples were taken of their lumbar spinal cord and after tissue processes, 7 micron slide were provided of the samples serially. Slides were stained by toluidin blue, and some photos were taken and neuronal density of the alpha motoneurons alpha anterior horn of the spinal cord was calculated by the disector method. Data were analyzed using Minitab software, ANOVA and t- tests.

**Results:** The neuronal density in the compression group (628±29.7) was decreased significantly in compare to the control group (1562±35.3) (P<0.05). The neuronal density in group C (1070±91), increased significantly in compare to the compression group (p<0.05). The neuronal density in group D (1117±62.8) and group E (1669±86.5) significantly increased in compare to the compression group (P<0.05).

**Conclusion:** This study showed that alchoholic extract of the *prosopis farcta* has a neuroprotective effect following sciatic nerve compression in rats.

**Keywords:** *Prosopis farcta* plant, Sciatic nerve, Spinal cord, Rat

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