

Antinociceptive effects of methanolic extract of *Allium paradoxum* in mice in Hot-plate and writhing tests

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Abstract:

Introduction: Pain is a kind of problem that almost all humans have experienced. Although it does not require treatment in mild cases, pharmacotherapy is essential in severe ones. Various drugs are currently being used for this purpose. One of the problems with all these drugs is high rate of side effects. Therefore, there is always a desire for discovering and use of compounds that, despite high efficacy, have fewer side effects. Some natural substances have such criteria. Many pharmacological activities have been reported for *Allium paradoxum*. The aim of present study was to investigate analgesic activities of its aerial parts extract for the first time.

Methods and Results: Total phenolic and flavonoids were measured by colorimetric method using Folin-Ciocalteu and Aluminum chloride reagents, respectively. Analgesic activity of methanolic extract was evaluated by Hot plate and acetic acid induced Writhing test on male Balb/C mice. Extracts showed significant Analgesic activity in both models. In writhing test extract showed significant analgesic activity in all doses tested compered to control group and reduced writhing behaviors ($p < 0.001$). In Hot plate test Extract caused increase in pain threshold compared to control specifically in 30th minute of the test ($p < 0.001$).

Conclusions: Our studies indicate that *Allium paradoxum* showed significant analgesic activity. It produced dose dependent effect on both models. These results introduced this plant as easily accessible source of natural analgesics.

Key words: *Allium paradoxum*, Analgesic activity, Writhing test, Hot-plate test