

Evaluation of analgesic effects of the extract of aerial parts of *Pedicularis sibthorpii* by formalin test in rats

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Background and Aims: Previous studies have demonstrated that methanolic extract of *Pedicularis sibthorpii* contained several flavonoids and phenylethanoid glycosids. Since these groups of compounds have antinociceptive and anti-inflammatory effects in different pain models, it is probable that the above total extract exerts anti-nociceptive effect in formalin test.

Methods: The doses of 50, 100 and 200 mg/kg of methanolic extract from the plant (*P. Sibthorpii*) were injected intraperitoneally to three groups of rats. There were positive control groups receiving morphine 5 mg/kg and indomethacin 40 mg/kg. The negative control groups were administrated 2.5% formalin and vehicle (DMSO + N/S).

Results: The extract at a dose of 50 mg/kg did not show any anti-nociceptive effect in rats. However, both doses of 100 mg/kg and 200 mg/kg exerted significant anti-nociceptive effect in the second phase of formalin test. That was similar to indomethacin, but morphine exerted anti-nociceptive effects in both phases of formalin test, also a dose of 200 mg/kg of methanolic extract had anti-nociceptive effect in the first phase of formalin test.

Conclusions: Based on the results, the *P. sibthorpii* total extract exerts antinociceptive effects in the second phase of formalin test which may be related to its flavonoid and phenylethanoid compounds.

Keywords: *Pedicularis Sibthorpii*; Analgesic; Formalin test