

The influence of extraction method on the composition and analgesic activity of *Calligonum comosum* phenolic extracts

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Abstract. The aim of this study was to evaluate the analgesic activity and the effect of extraction methods (ultra-sound: UM and maceration: MM) and solvents (ethanol: EtOH and methanol: MeOH) on the composition of phenolic extracts from *Calligonum comosum*. The results obtained by HPLC analysis demonstrated that the ethanol extracts have shown the highest content of total phenolic and flavonoid compounds. Also, the presence of most known phenolic compounds has been identified in all extracts, especially in the MeOH UM extract. The HPLC analysis showed the presence of ascorbic acid in methanol extracts and caffeic acid in ethanol extracts, and the maceration method shows a high concentration of phenolic compounds, the vanillin was detected in MeOH UM and the appearance of chlorogenic acid in UM extracts, finally the emergence of gallic acid, quercetin and rutin in some extracts. According to the results of the analgesic power, the methanolic extract of the maceration method induces a significant decrease in abdominal cramps compared to the control group and the values obtained are very close from those obtained with the standard anti-inflammatory drug (indomethacin). This result confirmed the beneficial effect of this Saharan plant.

Keywords: methanol extracts, ethanol extracts, maceration, ultrasound extraction, HPLC, analgesic activity.

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