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Abstract

Phytochemical analysis of essential oil of *Anthriscus nemorosa* and evaluation of antioxidant and anti-malarial activity

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Background and objectives: This investigation was performed in order to analyze the composition of the essential oil (EO) of *Anthriscus nemorosa* and evaluation of its anti-oxidant and anti-malarial activity of its extracts and determination of the total phenolics content (TPC) and total flavonoid content (TFC). **Methods:** One hundred g dried powder of *Anthriscus nemorosa* was submitted to hydro-distillation and also was extracted (with *n*-hexane, dichloromethane (DCM) and methanol (MeOH)), by using Clevenger and Soxhlet apparatus, respectively. Moreover, extracted essential oil (EO) was analyzed by GC-MS. Furthermore, the anti-oxidant, anti- malaria, Total phenolics content (TPC) and total flavonoid content (TFC) of EO and the extracts were investigated by DPPH, cell free *β*-hematin formation, Folin- Ciocalteau and colorimetric methods, respectively. **Results:** Fifty nine compounds, representing 94% of total oil were identified High content of terpenoids (60.02%) were identified in the essential oil with isogeranol (28.86%), crystathenyl acetate (13.86%) and farnesene (10.39%) as the most dominant compounds.. Methanol extract demonstrated free radical scavenging activity (RC_{50} 0.192±0.133).Total phenol contents was (325.82±2.72 mg/g). Total flavonoid content was (140.4096±2.4 mg/g). None of the extracts showed anti-malaria effect. **Conclusion:** Main constituents of *A. nemorosa* were terpenoids. In comparison with other species of *Anthriscus*, antioxidant activity of *A. nemorosa* essential oil was less noticeable.

Keywords: *Anthriscus nemorosa*, antioxidant assay, GC-MS, isogeraniol, wild parsley

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