


Chemical composition, antioxidant and antibacterial activity of *Thuja orientalis* essential oil

Wajaht A Shah and Mahpara Qadir
University of Kashmir, India

Essential oils derived from many aromatic plants are well known to possess cytotoxic, antioxidant, antifungal, insecticidal and antimicrobial activities. This work was carried out to evaluate chemical composition, antioxidant and antibacterial activity of *Thuja orientalis* essential oil. *Thuja orientalis* (family: Cupressaceae) is widely cultivated as a common ornamental plant. It possesses anti-plasmodial, antioxidant and elastase inhibitory activities. Chemical composition and pharmacological potential of hydro distillate from *Thuja orientalis* are reported in this study. Fresh fruits were subjected to conventional hydrodistillation. Antioxidant activity was assessed as free radical scavenging capacity (RSC) towards 2, 2-diphenyl-1-picrylhydrazil (DPPH) radicals and antibacterial

activity was evaluated against six test bacteria by agar well diffusion method. Qualitative and quantitative analysis of *Thuja orientalis* hydrodistillate by gas chromatography coupled with mass spectrometry revealed the presence of nineteen constituents, representing 94.6% of the total oil. The major constituents of oil were alpha-pinene (83%), sabinene (2.6%), delta-3-carene (2.5%). The oil showed appreciable antibacterial effect against all Gram-positive and Gram-negative bacteria tested with MIC values between 12.8-25.6 µg/ml. Therefore this oil could be used in the formulation of antimicrobial and antioxidant agents.

e: shahwajaht@yahoo.com

 Notes: