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Chemical Composition and Antimicrobial Activity of Mint (*Mentha*) Essential Oil

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EXTENDED ABSTRACT

Natural products of plant origin, such as essential oils have great benefit for human life. The objective of this study was to determine the chemical composition and antimicrobial activity of mint (*mentha*) essential oil (EO). The EO obtained by steam distillation and their constituents were determined by gas chromatography-mass spectrometry (GC-MS). The disc diffusion method was used for the determination of the antimicrobial activity. In the antimicrobial activity, the concentrations of 3.75, 7.5, 15, 30, 60µg/mL of mint essential oil were prepared and tested against four microbes; one Gram-positive: *Staphylococcus aureus*; two Gram-negative: *Escherichia coli*, *Klebsiella pneumonia*; and one fungal strain, *Candida albicans*. The oil content was 0.05% (v/w) and the GC-MS analysis led to the identification 42 components, the major components were found to be, Carvone (53.06%), D-limonene (25.65%), and Eucalyptol (2.56%). The inhibition zones of the oil were compared with standard ciprofloxacin. The results showed that the remarkable inhibition of the bacterial growth against the tested organisms. The microbial activity of mint essential oil was due to the presence of various secondary metabolites. Therefore, may warrant further research to determine the bioactive compound(s).

Keywords: *Mentha*, Steam distillation, Essential oil, Chemical composition, Antimicrobial activity.