عنوان مقاله:

Antibacterial activity of Marrubium vulgare L. against antibiotic resistance Klebsiella pneumoniae strains

محل انتشار:

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نویسندگان:

Zahra Dehbashi - *۱Gynecology Dept., Zabol University of Medical Sciences, Zabol, I.R. Iran*

Mahta Mazaheri - *۲Medical Molecular Genetics Dept., Shahid Sadoughi University of Medical Sciences, Yazd, I.R. Iran*

Saeedeh Saeedi - *۳Laboratory Expert Institute of Plant Biotechnology, University of Zabol, Zabol, I.R. Iran*

Seyed Kazem Sabbagh - *۴Plant Protection Dept., and Institute of Plant Biotechnology, University of Zabol, Zabol, I.R. Iran.*

خلاصه مقاله:

Background and aims: Herbal medicines are the major remedy in traditional medical systems and have a great contribution in maintaining human health and preventing many infectious diseases. The aim of this study was to assay antibacterial potential of Marrubium vulgare L. extract against Klebsiella pneumoniae resistant strains to current antibiotics and also GC/MS analysis to better understanding the extract composition. Methods: In this experimental research, ۳۰ K. pneumoniae strains isolated from urine culture of hospitalized patients were used. The essential oil of Marrubium vulgare L. was obtained by hydro distillation for ۲ hours using the Celevenger with yield of ۷۵%. Methanolic extract from M. vulgare L. was prepared using Rotary apparatus. In order to determine chemical composition of essential oil, gas chromatography coupled with mass spectrometry (GC-MS) was performed. The minimum inhibitory concentrations and minimum bacterial concentrations were investigated to characterize the antimicrobial activities of this essential oil and its extract. Data were analyzed using analysis of variance (one-way) to determine the statistical differences between different tests. Results: The results showed that K. pneumoniae strains were resistant to ۴ or ۳ agents including: Ampicillin (۶۵%), Gentamicin (۳۰%), Sulfamethoxazol (۲۵%). The lowest and the highest MIC value of M. vulgare L. extract were ۲.۵ and ۱۰ mg/mL, respectively. The highest and the lowest MIC value of M. vulgare L. essential oil was ۵ and ۱/۲۵ mg/m respectively. Conclusion: The present study confirmed that essential oil and extract of this plant could be served as an antibacterial agent in pharmaceutical industry.

کلمات کلیدی:

Klebsiella pneumoniae, Antibacterial effect, Antibiotic resistance, Gas chromatography