Antibacterial Activity of Pistacia Khinjul Fatty Acids Extract on Some Pathogenic Bacteria

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Abstract

Background: Some bacteria have resistant against antibiotic, so several trail made to use plant extract as antibacterial against some pathogenic bacteria

Objective: To compare and evaluate the difference between two species of *Pistacia khinjuk* (P. khinjuk) oil extract present in Kurdistan (Iraq) marked in their contain and antibacterial effect against some pathogenic bacteria

Patients and Methods: Essential oil was extracted from two species *Pistacia khinjuk* present in Kurdistan (Iraq) marked during the period of February to April, 2016 and evaluated the difference between two sizes components and their antibacterial effect against some pathogenic bacteria. Their activity is reasonably due to their ability to complex with extracellular and soluble proteins also to complex with bacterial cell walls. Also, known that *P. khinjuk* had anthocyanin pigment within its component Extraction was done using methanol and direct pressing methods. The essential oil extract analysed by HPLC (High-performance liquid chromatography) and tested against different pathogenic isolated bacteria (Staphylococcus aureus, Escherichia coli and Pseudomonas aeruginosa). The activities were considerably dependent on concentration of two types of seed.

Results: Successfully essential oils of locally big and small *Pistacia khinjuk* (*P. khinjuk*) seed were extracted . Both big and small seed oil gave a similar component of fatty acid (oleic, linoleic and lauric acid), while the small seed had more oil extract. P. khinjuk essential oil extract inhibited growth of the three isolated bacteria (Staphylococcus aurous, Escherichia coli and Pseudomonas aeruginosa). Both big and small seed oil extract had the same PH (about 4). Results showed that maximum absorption to extract pure pigment anthocynin from P. khinjuk oil was at wavelength 479 nm which has reached the highest concentration of the dye. The reason can be attributed to the purity of the color and the presence of some of the other pigments.

Conclusion: Extracted essential oil noted antimicrobial activity and was characterized mostly by the occurrence of flavonoid and flavonoid glycosides. Difference between the absorbency of pure pigment anthocynin was attributed to the purity of the color and the presence of some of the other pigments.

Key words: Plants extracts, Pistacia khinjuk, Plant oil.

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