

Antibacterial Activity of Propolis Extracted in Three Different Solvents and in Three Different pH values on some Pathogenic Bacteria

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Abstract : This research performed to investigate the effects of Al-Hillapropolis (Babylon province) aged for seven days, extracted by three different solvents (Ethanol, Aceton, Toluol) and with three different pH values(6, 7, 8) on (16) samples of pathogenic bacteria including (*Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Klebsilla pneumonia*). Antibacterial activity of propolis tested for all the isolated bacteria. It was found that Ethanol and Aceton had maximum antibacterial action in pH (6 and 7) on Gram positive and Gram negative bacteria, while the last solvent used in this study(Toluol) had the highest effect compared with other solvents only on Gram negative bacteria and approximately in tested pH values(6,7, 8).

Keywords: Antibacterial Activity, Propolis, pH values, Pathogenic Bacteria.

Introduction

The word propolis is derived from Greek, in which pro stands for “at the entrance to” and polis for “community” or “city,” which means this natural product is used in hive defense. Propolis is a natural resinous mixture produced by honey bees from substances collected from parts of plants, buds, and exudates. Bees gather propolis from different plants, in the temperate climate zone and use it in the construction and repair of their hives for sealing openings, cracks and smoothing out the internal walls due to its waxy nature and mechanical properties, also they use it as a protective barrier against external invaders like snakes, lizards and so forth, or against weathering threats like wind and rain^{1,2}.

Recently, there are enormous increasing in focusing on the propolis by researches or by using as remedy around the world. This research aimed to evaluate the antibacterial activity of the Iraqi propolis (exactly Babylon province propolis) extracted in three solvents including (Ethanol, Acetone and Toluol) and in three different pH value (6,7 and 8) against some bacterial isolates.

Materials and Methods

Bacterial Samples:

A total of (16) Bacterial samples were included in this study. These bacteria were isolated from specimens like sputum, pus, urine, stool and blood of patients admitted to different wards in Marjan Hospital/ Hilla city/ Babylon Province / Iraq from May to June 2015,