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Physiochemical and Antibacterial Assessment of Iranian Propolis Gathering in Qazvin Province

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Abstract : Introduction: Nowadays, the phenomenon of bacterial resistance is one of the most important challenge of the health community in the world. Propolis is most important production of bee colonies that collected from of various plants. So far, a lot of investigations carried out about its antibacterial effects. Material and methods: Thirty gram of propolis prepared as ethanolic extract and after different process of purification, 7.5 gr of its pure form were obtained. Propolis compounds identification was performed by TLC and VLC methods. The HPLC spectrum obtaining from propolis ethanolic extract was compared with some purified standard phenolic and flavonoid substances. Antibacterial effects of ethanol extract of purified propolis were evaluated on two strains of Staphylococcus aureus and Pseudomonas aeruginosa and their MIC was determined by the microdillution assay. Results: Ethanolic propolis extraction analyzed by TLC were resulted to confirm several phenolic and flavonoid compounds in this extract and some of the confirmed by HPLC technique. Minimum inhibitory concentration (MIC) for standard Staphylococcus aureus (ATCC25923) and Pseudomonas aeruginosa (ATCC27853) strains were obtained 2.5 mg/ml and 50 mg/ml respectively. Conclusion: Bee Propolis is a mix organic compound that has a lot of beneficial effects such as anti-bacterial that emphasized in this investigation. It is proposed as a rich source of natural phenolic and flavonoids compounds in designing of new biological resources for hygienic and medical applications.

Keywords : propolis, Staphylococcus aureus, Pseudomonas aeruginosa, antibacterial
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