

عنوان مقاله:

Evaluating Antibacterial Effects of Alcoholic Extracts and Essential Oil of *Althaea officinalis* Against Two Types of (Gram-positive and Gram-negative Bacteria (*Bacillus cereus* and *Klebsiella pneumonia*

محل انتشار:

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خلاصه مقاله:

Regarding the emergence of microbial resistant strains to chemical drugs, it was important to make efforts for finding new antimicrobial factors with fewer side effects for substituting chemical drugs. This study investigated the antibacterial effects of alcoholic extracts (ethanol and ethyl acetate). *Althaea officinalis* L. parts (flower, leaf, stem and root) were considered against two positive and negative bacteria types of pneumonia (*Bacillus cereus* and *Klebsiella pneumonia*) under laboratory conditions. In order to investigate anti-microbial activities of alcoholic extracts and *A. officinalis* essence in different concentrations, they were affected over mentioned bacteria by using the Diffusion Disk method. Penicillin, Ampicillin, Gentamicin, and Vancomycin were used as a positive control and Ethanol, Ethyl acetate and DMSO solvents as negative control and Minimal Inhibitory Concentration (MIC) and Minimal Bactericidal Concentration (MBC) have been determined. Taking essence has been conducted by the Clevenger system. Its chemical combinations were identified by GC-MS. Results showed that stem (total) ethanol extracts and *A. officinalis* essences (in the concentration 100 mg/ml) have the highest microbial properties on *K. pneumonia*. The ethanol extract was affected on all components of *A. officinalis* and Ethyl acetate extracts of leaf and stem over *K. pneumonia* and *A. officinalis* essence (in the concentration 12.5 µl/ml) over both bacteria. Gentamicin as an anti-biotic had good inhibitory power against bacteria as a positive control in comparing other antibiotics. 56 combinations of *Althaea officinalis* essence were extracted by more than 93% of main combinations consisted of Thymol, p-Cymene, γ-Terpinene, β-pinene, Terpeneol, Carvacrol. The more extract and essence concentration increased antibacterial properties and inhibitory halo diameter. *A. officinalis* extracted combinations with anti-bacterial properties were considered as the main factor for consuming *A. officinalis* in different industries as an herbal drug by natural origin and anti-bacterial effects.

کلمات کلیدی:

bacterial, Extract, Essence, *Bacillus cereus*

لینک ثابت مقاله در پایگاه سیویلیکا:

