Correlation Between Vicia ervilia L. Willd. Antibacterial Activity

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Abstract

Context: Plants are important in devising new antibacterial drugs. Unlike several fabaceae seeds, Vicia ervilia L. Willd., is not used up till now for human consumption. Objective: evaluate antibacterial potential of the seeds and correlate it, if any, with its phenolics. Methods: Seeds ethanol (SEE), aqueous (SAE), and methanol (SME) extracts were prepared. Their total phenolic content (TPC) was determined spectrophotometrically. Antibacterial activity against ten pathogenic bacteria (Mycobacterium africanum, M. bovis, M. caprae, M. microti, M. orygis, Staphylococcus aureus, Streptococcus pneumoniae, Pseudomonas aeruginosa, Escherichia coli, and Salmonella typhimurium) was evaluated using agar well diffusion assay. Also the minimum inhibitory and bactericidal concentrations (MIC & MBC) were also determined. Results: Total phenolic content of SME is significantly (p<0.001) higher than that of SEE (4.8 and 2.5µg/mg gallic acid equivalent respectively). SME and SEE significantly inhibit the growth of all tested strains except M. caprae and P. aeruginosa. V. ervilia L. Conclusion: The seeds significant antibacterial activity was attributed to its phenolics.

Keywords: phenolics, antibacterial activity