

ANTIBACTERIAL ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF DIFFERENT SOLVENT EXTRACTS OF VARIOUS PARTS OF VITEX NEGUNDO L OBTAINED BY SEQUENTIAL EXTRACTION METHOD

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Abstract

Plants are the reservoir of wide range of bioactive compounds, which can be used for the treatment of various ailments in human. Therefore, screening of plant extracts for the discovery of novel bioactive compounds is found to be a popular task among scientists. In this study sequentially extracted different solvent extracts (dichloromethane, ethyl acetate, ethanol, methanol and aqueous) of leaf, flower and fruit of *Vitex negundo* were tested for their antibacterial activity against *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Staphylococcus aureus* and *Bacillus cereus* by agar well diffusion method. Streptomycin and a mixture of solvent (Dimethyl sulfoxide and Acetone) were used as standard and control respectively. Phytochemical analysis was done to report the chemical compounds present in each extracts. The one-way analysis of variance (ANOVA) followed by least significant difference (LSD) test were used for statistical analysis. This study demonstrated that sequential extraction method could be very effective in screening of plant material against bacteria. Ethyl acetate, ethanol and methanol extracts of fruit, flower and leaf showed potent inhibitory effect on test bacteria. Among the active extracts ethyl acetate extract of flower showed the highest inhibitory effect against all the test bacteria and also it further demonstrated that this effect significantly ($P < 0.05$) differed from all other test samples. This is the first report that reveals the antibacterial activity of flower and fruit of *Vitex negundo*. Phytochemical analysis revealed the presence of various chemical compounds such as alkaloids, flavonoids, tannins, saponins, cardiac glycosides and terpenoids in different solvent extracts. Present study forms a primary platform for further purification and characterization of active constituents from ethyl acetate extract of flower of *Vitex negundo*.