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Antimicrobial activity of Indian medicinal plants Vitex negundo, Gymnema sylvestre and Annona cherimola

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Medicinal plants used for personal health-care and environmental esthetics are ecologically sound. Herbal medicine is among the most respected of the ancient natural therapies and has stood the test of time despite the introduction of modern medical science. Treatment with herbs can often provide a gentle and safe alternative or complement to modern drugs and other orthodox medical treatments. Medicinal plants are relied upon by 80% of the world's population, and in India the use of plants as therapeutic agents remains an important component of the traditional medicinal system. The use of antibiotics has revolutionized the treatment of various bacterial infections. However, their indiscriminate use has led to an alarming increase in antibiotic resistance among microorganisms, thus necessitating the need for development of novel antimicrobials. Recent years have witnessed a renewed interest in exploring natural resources for developing such compounds. The main aim of the research work is to evaluate the antimicrobial activities of leaf extracts of Vitex negundo, Gymnema sylvestre and bark extract of Annona cherimola which could be a better alternative for synthetic antimicrobials. For this we have extracted Vitex negundo, Gymnema sylvestre and Annona cherimola with petroleum ether followed by Chloroform and finally with a mixture of water and ethanol, using soxhlet apparatus. Antibacterial activity of different extracts were evaluated by "Paper Disc Diffusion Method" against Bacillus subtilis, Staphylococcus aureus and Escherichia coli using erythromycin as a standard and DMSO as control sample. The data obtained were subjected to ANOVA test to determine whether there was significant difference between extract used and also between the length of incubation. Zone of inhibition of Bacillus subtilis, Escherichia coli and Staphylococcus aureus were found respectively when compared with the result of the Standard. So, in future the leaves of these plants can be used for selective infections and can be further explored for isolation of the active principles responsible for antimicrobial property. The plant extracts were also evaluated for antidiabetic activity and Gymnema sylvestre was proved to possess efficient antidiabetic activity among the tested plant extracts.

Biography

Dr. Smita C. Pawar working as Assistant Professor, Department of Genetics, Osmania University, Hyderabad. She has completed Master's degree and Ph.D from Osmania University.

She is the principal investigator of two Major research projects funded by DBT and UGC (2011). UGC sponsored research project entitled "Epigenetic profiling and in vitro knock down studies of Transcription factor-TFCP2 with siRNA/ShRNA in hepato-cellular carcinoma in human cell lines".