Acne vulgaris is a most common skin disorder where Propionibacterium acnes colonization contribute to the etiology of the disease. Bacterial resistance is an ongoing problem in the treatment of acne. Therefore, an agent which can inhibit P. acnes growth and suppress the inflammatory response will provide promising benefits for acne. The present study was done to test the potential of two plants from family Myrtaceae (P1) and Rosaceae (P2) to combat acne vulgaris. The crude ethanol extracts of leaves of both the plants were used in the various assays. The antibacterial activity was evaluated against pathogenic Propionibacterium acnes using broth dilution method. Plant; P1 inhibited the bacterial growth with MIC of 62.5-31.3 μg/ml whereas Plant; P2 showed a lower MIC of 15.7 μg/ml. Both the plants were tested for cytotoxicity on Mouse melanocytes B16-F10 cells and Human monocytic U937 cells. Plant; P1 showed moderate to low toxicity with fifty percent viability of cells (EC50) at concentrations of 60.00 μg/ml and 209.02 μg/ml on B16-F10 and U937 cells respectively. Whereas Plant; P2 showed a comparatively higher toxicity with EC50 values of 48.23 μg/ml and 25.07 μg/ml on B16-F10 and U937 cells respectively. The antibacterial activity was confirmed by Transmission electron microscopy. The electron micrographs showed damage of cell wall of P. acnes treated with the plant extracts, leakage of intracellular contents and abnormal changes. The antioxidant activity was detected by DPPH radical scavenging method and EC50 (substrate concentration to produce 50% reduction) was found to be 0.89 μg/ml for P1 and 2.34 μg/ml for P2. P. acnes induce monocytes to secrete pro-inflammatory cytokines and play an important role in pathogenesis of inflammatory acne. The anti-inflammatory activity of extracts on secretion of cytokine IL-8 was evaluated using ELIZA. The synergistic study of aqueous extracts of both the plants was done to evaluate the Fraction inhibitory concentration (FIC) and was found to be below 5.

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Antimutagenic potential of Combretum microphyllum methanol leaf extract


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Combretum microphyllum was used to evaluate its antimutagenic potential. The methanol leaf extract of C. microphyllum is an important step in the discovery of new effective cancer chemopreventive agents. The potential antimutagenic effects of Combretum microphyllum leaf methanol extracts were investigated using the Ames test (Salmonella typhimurium TA98, TA100 and TA102), cytokinesis-block micronucleus-cyto assay and comet assay (single cell gel electrophoresis). This species had antimutagenic effects ranging from 10% to more than 30% in the Ames test, prevented micronuclei induction by up to 65.9%, chromosomal rearrangements (51.9%) and gene amplification by 86.1% in the micronucleus/cyto assay. In the comet assay, there was clearly a dose dependent decrease in comet tail length. Taking into account that chromosomal biomarkers of genomic instability are relevant to cancer and that genotoxicity involving gene mutations, chromosomal aberrations and rearrangements and DNA strand breakages play a major role in cancer initiation, C. microphyllum has potential in cancer prevention as it inhibits genotoxic end-points. Bioassay-guided fractionation of the crude methanol leaf extract, using the Ames test (S. typhimurium TA98, TA100 and TA102) as an indicator of antimutagenicity, led to the isolation of three compounds. Chemical characterization of the compounds and assaying for further activity in the other assays is in progress.

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