

Study of Gc-ms And Hplc Characterized Metabolic Compounds in Guava (*Psidium Guajava L.*) Leaves

ABSTRACT

Psidium guajava leaves are rich source of nutrients, antioxidants, phytoconstituents and biological active compounds. The study was designed to elucidate secondary metabolites like alkaloids, saponins, flavonoids, tannins and glycosides in extracts of guava leaves through Gas chromatography-mass spectrometry (GC-MS) and high-performance liquid chromatography (HPLC) by qualitative as well as quantitative procedures. These metabolites were further tested for their antimicrobial potential against two-gram positive (*Bacillus subtilis* and *Staphylococcus aureus*) and two-gram negative (*Escherichia coli* and *Pasteurella multocida*) bacteria and three pathogenic fungal strains (*Asprrgillus niger*, *Fusarium solani* and *Aspergillus flavus*). GC-MS analysis revealed the presence of major constituents like Ca- Caryophyllene (22.70%), α cubebene (11.2%) and alpha Humulene (5.91%). The ethyl-acetate, methanol, n-hexane and chloroform extracts were tested for antibacterial and antifungal activities against above mentioned microbes. Among all the tested solvent extracts, Chloroform and ethyl acetate extracts of *P. guajava* demonstrated more sensitivity towards the growth of *B. subtilis* and *P. multocida* with MIC of 230 ± 3.02 , $316. \pm 6.2$ and 237 ± 5.09 and 288 ± 1.55 $\mu\text{g/ml}$, respectively. Methanolic extracts showed higher MIC against *S. aureus* (233 ± 5.51 $\mu\text{g/ml}$) and *E. coli* (192 ± 2.05 $\mu\text{g/ml}$), respectively. The findings of this current study would provide the way to use guava as a potential therapeutic agent to combat antimicrobial and antifungal resistance.