

Comparative Phytochemical analysis and Antimicrobial Activity of Methanolic and Ethanolic Extracts of *Stevia rebaudiana* Leaves

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Abstract—The present study is based on the comparative evaluation of preliminary phytochemical screening, *in vitro* antimicrobial activity of methanolic and ethanolic extracts *Stevia rebaudiana* leaves. The crude extracts of *S. rebaudiana* leaves were subjected to phytochemical screening tests by using standard procedures for the detection of the presence or absence of major secondary metabolites such as alkaloids, steroidal compounds, phenolic compounds, flavonoids, saponins, tannins and phytosterols. The antibacterial activity of *S. rebaudiana* leaves was tested by agar –well bioassay. The plant extract of different concentration (30 μ L, 40 μ L, 50 μ L, and 100 μ L) was tested against eight bacterial strains (i.e., *Zymomonas* spp, *Salmonella typhi*, *Bacillus subtilis*, *Pseudomonas aeruginosa*, *Cellulomonas* spp., *Pseudomonas fluorescens*, *Klebsiella pneumonia*, *Escherichia coli*). The results of preliminary phytochemical screenings showed the presence of different kinds of phyto-constituents in methanol and ethanol extract of *S. rebaudiana* leaves and the most copious compound were phenols followed by phytosterols, tannins, saponins and flavonoids. Among both the extracts methanol extract showed high antibacterial activity at 100 μ g/ml (18.06 \pm 0.09 – 26.06 \pm 0.24 mm zone of inhibition) on all the tested organisms. Thus, results signify that *S. rebaudiana* has effective therapeutic potential.

Keywords: *Stevia rebaudiana*, Leaf extracts, Antibacterial activity, Phytochemical analysis.