

Phytochemical Screening, Chemical Compositions, Antimicrobial and Antioxidant Activities of *Peperomia Pellucida* (L.) Kunth (ကျောက်သင်ပုနံး)

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Abstract

Medicinal plants act as an indigenous source of new compounds possessing therapeutic value and can also be used in drug development. World Health Organization estimated that, 80% of population of developing countries depends on traditional medicines, mostly natural plant products, for their primary health care needs. The role of traditional medicine (TM) has always maintained its popularity worldwide. TM in Myanmar is widely practiced by the majority of population, partly as a supplement and partly alternate to modern medicine. In this research work one of Myanmar indigenous medicinal plants, *Peperomia pellucida* (L.) Kunth., was selected for chemical analysis. Phytochemical compounds present in the test plant were carried out according to Harbone J.B (1998). The antimicrobial activity of test plant extracts was determined on six selected organisms (*Bacillus subtilis*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Bacillus pumilus*, *Candida albicans* and *Escherichia Coli*), by applying agar-well diffusion technique, according to modified Kirby and Bauer method. The determination of antioxidant activity was done by 2,2-diphenyl-1-picrylhydrazyl, DPPH assay. And also, Gas Chromatography- Mass Spectrometer (GC-MS) was used for identification of bioactive components. The preliminary phytochemical examination of whole plant contains alkaloid, carbohydrate, flavonoid, glycoside, phenol, polyphenol, reducing sugar, saponin, steroid and tannin. According to antimicrobial activities, ethanol extract responds high activity (zone inhibition 26 mm– 34 mm) on all microorganisms. The antioxidant activity of test plant ($IC_{50}=0.885 \mu\text{g/ml}$) was comparable to the well-known antioxidant, ascorbic acid ($IC_{50}=0.517 \mu\text{g/ml}$). Eight bioactive compounds from acetone extract, 19 from chloroform extract and 18 from methanol extract of test plant were identified. These compounds have many medicinal properties including antimicrobial and

antioxidant activities. These findings indicated that, test plant has potential to preventive properties against oxidative damage and some pathogens. These results gave scientific information for herbal medicine users, local practitioners, standardization and quality control of precious indigenous drug and pharmaceutical industries using *Peperomia pellucida*(L.) Kunth., for different types of ailments.