

Determination of Antioxidant Activity using IC50 Values and Bioactive Chemical Composition of Flowers Extracts of *Anthocephalus Cadamba*

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Abstract *Anthocephalus cadamba* belongs to a family Rubiaceae is well reputed for their traditional uses in Ayurveda as a medicine for blood diseases and leprosy, therefore, the present study was designed to determine the reducing potential of different extracts from the flowers of these plants and identification of medicinally active compound present in their extracts.

The flowers of selected medicinal species were extracted by Soxhlet extraction technique using four different solvents, these extracts concentrated and dried by the vacuum rotary evaporator. Phytochemicals were screened by standard methods. Thin layer chromatography was carried out by using gradient solvents system and for the confirmation of bioactive compound these extracts were subjected for GCMS analysis. Antioxidant activities of extracts were evaluated by using standard protocols and the results were expressed in $\mu\text{g/ml}$ against ascorbic acid.

The methanolic and aqueous extracts of flowers from *A. cadamba* were found to possess highest antioxidant activity as compared to other extracts. Methanolic and aqueous extracts shows most significant antioxidant potential with $84.65 \pm 0.048\%$, $89.30 \pm 0.009\%$ respectively with lowest IC_{50} values $2.89 \pm 1.37 \mu\text{g/ml}$ and $2.78 \pm 1.43 \mu\text{g/ml}$. The phytochemical screening and GCMS analysis identified the bioactive compound present in this plant and also support the use of this plant in traditional medicine.

It was conclude that, all the extracts demonstrated significant antioxidant activity as compared with standard ascorbic acid. Bioactive chemical analysis revealed that many medicinally active components like squalene used for skin cancer, ajmalicine used for blood pressure control are the most important constituents of flowers extracts of *A. cadamba*.

Keywords: Antioxidant activity, DPPH method, Bioactive chemicals, *A. cadamba*.