

**Title : Free Radical Scavenging Activity of Lagerstroemia speciosa Extracts****Author(s) :** Mrs. Rohini Shyam Waghmare, Dr. Pratima Arun Tatke**Institution :** C. U Shah College of Pharmacy. S. N. D. T. Women's University Mumbai Maharashtra India**Keywords :** Free radical, antioxidant, Lagerstroemia speciosa

Introduction:

The free radicals are responsible for causing a large number of diseases including atherosclerosis, cardiovascular diseases, cancer, Alzheimer's disease. They are also involved in the process of aging. The ample daily intake of dietary antioxidants gives protection against free radicals. These dietary antioxidants are useful in prevention of diseases as well as delaying the consequences of life threatening diseases. The antioxidants from natural resources are proven very effective. In the present study, various bark extracts of plant Lagerstroemia speciosa were explored for its antioxidant activity.

Methodology:

The authenticated sample of bark of plant was extracted with different solvents such as distilled water, methanol, ethanol, 50% ethanol and ethyl acetate using Soxhlet extractor to give aqueous, methanolic, ethanolic, hydroalcoholic and ethyl acetate extracts, respectively. The total phenol content was determined by Folin-Ciocalteu method. Total flavonoid was determined by aluminum chloride colorimetric assay. The antioxidant activity was determined by DPPH free radical scavenging activity of extracts. All the tests were performed in triplicate and the results were expressed as mean \pm SEM (Standard error of mean) where $n = 3$.

Result:

All the extracts were found to possess an appreciable quantity of phenolic substances. The aqueous, methanolic, ethanolic, hydroalcoholic and ethyl acetate extracts showed presence of 310.3 ± 0.35 , 48.75 ± 1.99 , 30.85 ± 3.73 , 64.15 ± 2.02 and 29.06 ± 2.24 mg of gallic acid equivalent/g of extract respectively. The flavonoid content was found to be 1.77 ± 0.48 , 0.60 ± 0.145 , 0.49 ± 0.112 , 1.38 ± 0.368 and 0.56 ± 0.135 mg of rutin equivalent/gm of extract in the aqueous methanolic, ethanolic, hydroalcoholic and ethyl acetate extracts, respectively. The phenolic compounds as well as flavonoids possess good antioxidant activity. The aqueous extract and hydroalcoholic extract were further analyzed for free radical scavenging activity in DPPH assay as they showed maximum amount of phenols and flavonoid content. Concentration dependent scavenging activity in DPPH assay was found in both extracts. The aqueous extract showed IC₅₀ value $44.45 \mu\text{g/ml}$ and hydroalcoholic extract showed IC₅₀ value $44.74 \mu\text{g/ml}$. In the present study observed activity of bark extracts could be related to phenolic and flavonoid content.

Conclusion:

The bark extracts of Lagerstroemia speciosa showed antioxidant activity. The extracts showed high content of phenols and flavonoids which are natural antioxidants hence extracts can serve as nutritional supplement.

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