



ANTIOXIDANT STUDY OF SOME SELECTED MEDICINAL PLANT BY 1,1- DIPHENYL-2-PICRYLHYDRAZYL (DPPH) RADICAL SCAVENGING ACTIVITY

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ABSTRACT

The mean IC₅₀ values of alcoholic extract and ethyl acetate extracts of selected plants were as follows: *Boswellia Ovalifoliolata*: Alcoholic and ethyl acetate extracts of *boswellia ovalifoliolata* bark were found to possess concentration dependent scavenging activity on DPPH. The mean IC₅₀ values for the DPPH radical scavenging activity of alcoholic and ethyl acetate extracts of *boswellia ovalifoliolata* bark were found to be 68±3 µg and 135.3±4 µg respectively. The mean IC₅₀ value of ascorbic acid was found to be 37.6±2 µg. *Memecylon edule*: Alcoholic and ethyl acetate extracts of *memecylon edule* leaves were found to possess concentration dependent scavenging activity on DPPH. The mean IC₅₀ values for the DPPH radical scavenging activity of alcoholic and ethyl acetate extracts of *memecylon edule* leaves were found to be 64.7±2 µg and 76.3±3µg respectively. The mean IC₅₀ value of ascorbic acid was found to be 37.6±2 µg. **Kew Word** -: Phytochemical, *Boswellia ovalifoliolata*, *Memecylon edule*

INTRODUCTION:

Medicinal plants are an important therapeutic aid for various ailments and those are a source for generating novel drug compounds for curing many diseases. The shortcomings of the drugs available today, propel the discovery of new pharmacotherapeutic agents in medicinal plants (Dorman H.J. and Deans S.G., 2000). Accordingly, in the present investigation, the qualitative and quantitative phytochemical analysis of selected medicinal plants (*Boswellia ovalifoliolata*, and *Memecylon edule*) was carried out and determined the total phenolic contents. In DPPH assay method is based on the reduction of alcoholic DPPH solution (dark blue in colour) in the presence of a hydrogen donating antioxidant converted to the non-radical form of yellow colored diphenyl picrylhydrazine.

METHODOLOGY

The scavenging activity for DPPH free radicals was measured according to the procedure described by Blois (1958). Varying concentrations of the extract of *Memecylon edule* and *Boswellia ovalifoliolata* were made up to 1ml with respective solvents. A volume of 20 µl of the extract at each concentration was added to the 200 µl of 0.1 mM DPPH in ethanol and incubated in dark at room temperature for 30 min. Absorbance was read at 517 nm using a multi-mode

Detection reader (Molecular devices, CA, USA). Ascorbic acid was employed as standards. Analyses were run in triplicate and percentage free radical scavenging activity (% FRSA) was calculated using the formula.

$$\% \text{ FRSA} = \frac{A_{\text{control}} - A_{\text{extracts}}}{A_{\text{control}}} \times 100$$

RESULTS AND DISCUSSION:

In the present study, the alcoholic and ethyl acetate extracts of *Boswellia ovalifoliolata* bark and *Memecylon edule* leaves showed DPPH free radical scavenging activity and the results were given in Table-5.3 and shown in Fig-5.1. The mean IC₅₀ value of the DPPH radical scavenging activity of alcoholic and ethyl acetate extracts of *Boswellia ovalifoliolata* bark and *Memecylon edule* leaves were found to be 68 ±3 µg, 135.3±4 µg, and 64.7 ±2 µg, 76.3±3 µg respectively. The ascorbic acid IC₅₀ value was found to be 37.6±2 µg. The results were given in Table 5.7 and shown in Fig-5.4 The alcoholic and ethyl acetate extracts of *Boswellia ovalifoliolata* bark and *Memecylon edule* leaves showed dose dependent DPPH radical scavenging activity. Between the two plant extracts, alcoholic extract showed better DPPH radical scavenging activity (68±3 µg and 64.7±2 µg) than the ethyl acetate extract (135.3±4 µg and 76.3±3 µg). The results were given in Table 5.7 and shown in Fig-5.4 The order of DPPH radical scavenging activity IC₅₀ values of alcoholic and ethyl acetate extracts of the selected plants as follows: ascorbic acid (37.6±2 µg) > alcoholic extract of *Memecylon edule* leaves (64.7±2 µg) > alcoholic extract of *Boswellia ovalifoliolata* bark (68±3 µg) > ethyl acetate extract of *Memecylon edule* leaves (76.3±3 µg) > ethyl acetate extract of *Boswellia ovalifoliolata* bark (135.3±4 µg).

The study clearly indicated that the selected two plant extracts possess dose dependent DPPH radical quenching activity and among them the standard drug ascorbic acid showed good activity followed by alcoholic extracts of the *Boswellia ovalifoliolata* bark and *Memecylon edule* leaves.

CONCLUSIONS

All the selected plant extracts (alcoholic and ethyl acetate) showed dose dependent free radical scavenging activity. The alcoholic extract of selected plants showed good antioxidant activity than the ethyl acetate extract. There is variability in phenolic content of both alcoholic and ethyl acetate extracts of the selected plants. Between the two selected plants alcoholic extract of *memecylon edule* leaves shows more phenolic than *boswellia ovalifolioata* bark.

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