SIIC034

COMPARATIVE STUDY ON PHYTOCHEMICAL PROPERTIES, ANTIBACTERIAL AND ANTIOXIDANT ACTIVITIES OF DIFFERENT SOLVENT EXTRACTS OF TWELVE SELECTED MEDICINAL PLANTS

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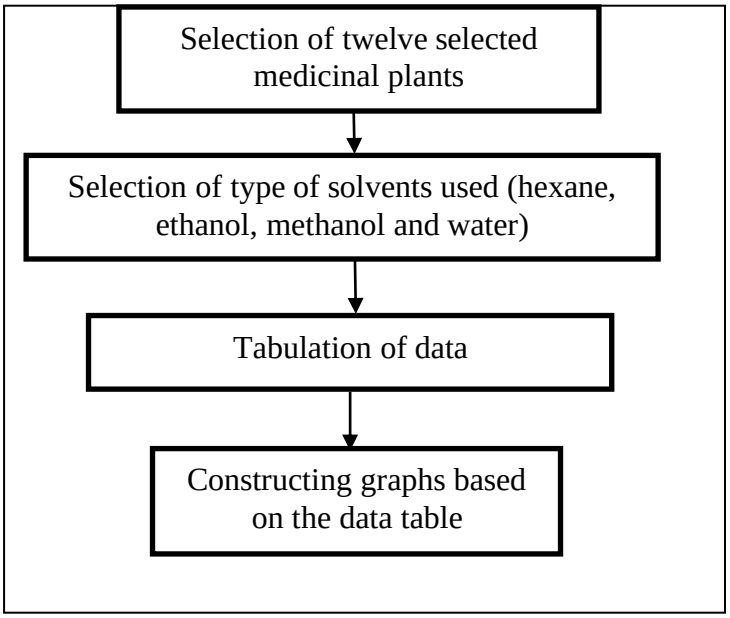
Abstract:
The present study was undertaken to evaluate the phytochemical properties and to study the antibacterial and antioxidant activities of different solvent extracts (ethanol, methanol, water and hexane) of medicinal plants. twelve medicinal plants were selected and the presence of bioactive compounds (flavonoid, terpenoid and alkaloid) were analyzed. Both evaluations of antibacterial and antioxidant activities were based on the detection of zone of inhibition and the detection of antioxidant activities by different solvent extracts, respectively. The selected medicinal plants for this study were *Euphorbia wallichii, Hypochaeris radicata, Boerhaavia diffusa* Linn, *Tinospora cardifolia, Eclipta alba, Heliotropium bacciferum, Crotalaria pallida, Hibiscus sabdariffa, Lantana camara, Sida rhombifolia, Cirsium wallichii,* and *Pogostemon benghalensis*. The results of phytochemical properties evaluation showed that water extract have the highest percentage of bioactive compounds (24.11%) followed by ethanol (22.77%), methanol (19.2%) and hexane (11.61%). In both of antioxidant and antibacterial activities evaluations, the trend of detection was hexane < ethanol < water < methanol for the detection of antioxidant activities and detection of zone of inhibition, respectively.

***Keywords*:**
Phytochemical; Antioxidant; Antibacterial; Medicinal plant; Solvent extract

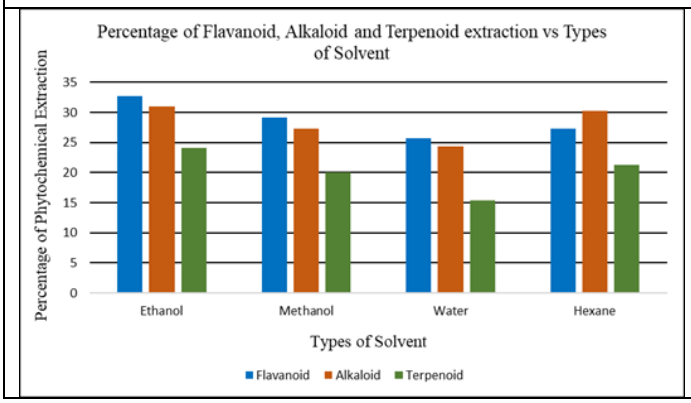
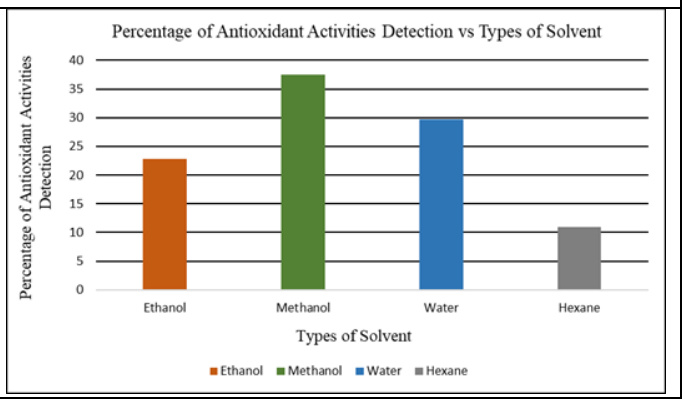
Objectives:

- To study different extraction solvent on phytochemical properties (flavonoid, alkaloid and terpenoid) of twelve selected medicinal plants.
- To evaluate different extraction solvent on antibacterial activities of twelve selected medicinal plants.
- To evaluate different extraction solvent on antioxidant activities of twelve selected medicinal plants.

Methodology:



Results:

Phytochemical properties	***Antioxidant activities***
	

Conclusion:

From the present study, it can be concluded that the bioactive compounds extraction of twelve medicinal plants largely depended on the types of solvent used. The polarity of the solvent plays a big role in the evaluation of phytochemical properties, as well as for its antibacterial and antioxidant activities. Overall, methanol solvent shows a great performance in all evaluations while hexane shows the opposite. It can also be concluded that the bioactive compounds extracted by these solvents are responsible for their potentials in antibacterial and antioxidant activities. For future studies, different types of solvent can be used in order to retrieve better results for all the evaluations. Solvents such as diethyl ether and chloroform can be used as many studies used them in the extraction of medicinal plants.