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Anti-oxidant activity of Methanolic extract of leaves of *Eclipta Prostrata (L.) L.*

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Abstract

Eclipta Prostrata (L.)L is medicinally important plant species to treat of different diseases such as hepatic diseases. The present work is aimed to screen this medicinal plant for phytochemicals. leaf, stem, flower and seed of this plant were extracted in methanol solvents by sox let extraction and screened for secondary metabolites. The plant has been reported to contain alkaloids, steroids, polypeptides, phytosterol, β-amyrin, triterpenes, phenols, flavones, luteolin, coumarin and wedelolactone. The study confirmed that *Eclipta Prostrata (L.)L* has good antihepatotoxic potential effects due to the presence of wedelolactone. Luteolin, coumarin using methanol extract.
Keywords: *Eclipta Prostrata (L.)L* – Anti-hepatotoxic activity, luteolin, wedelolactone, β-amyrin

1. Introduction

The herb *Eclipta Prostrata (L.)L* (family, Asteraceae) is commonly known as Bhringaraja (Sanskrit),maka (Marathi))and Bhangra(Hindi)has been reported to show protective effect on experimental liver damage in rats[1].The plant grows commonly in moist places as a weed in warm temperate to tropical areas worldwide. It is widely distributed throughout India, china, Thailand and Brazil [2]. The whole plant has been reported for the treatment of liver cirrhosis and infective hepatitis. The plant is known to have some important pharmacological activities such as hepato protective, antimicrobial, analgesic, anti-inflammatory, and antiviral activity [3].

Eclipta Prostrata (L.)L has been used in traditonaltigation aimed to study of the Methanolic extracts of *Eclipta Prostrata(L.)L* subjected to analyze the antioxidant activity.

2. Materials & Methods

2.1Collection and preparation of plant materials

Eclipta Prostrata (L.)L were collected from Trichy, Tamilnadu, India and confirmed by Dr. S. John Britto, The Rapinat Herbarium, ST. Joseph's college, Tiruchirappalli. The leaves were thoroughly washed thoroughly and the leaves were shade dried and coarsely powdered in a grinder.

2.2 Extract preparation

Shade dried powder was extracted with methanol (1:3w/v).Methanol extract was prepared by cold percolation and it is concentrated under reduced pressure using rotatary evaporator at 4°C. Finally crude extract was obtained. The crude extract was stored at 4°C until further use.

2.3 Antioxidant activity

2.3.1 DPPH Radical scavenging Assay:

The scavenging effects of samples for DPPH radical were monitored according to the method described by Yen and Chen. Briefly, 2.5ml of test sample was added to 2.5ml of 0.18mM DPPH methanol solution. The mixture was then vortexes for 1 minute and then left to stand at room temperature for
30 minute in the dark and its absorbance was read at 520nm.The ability to scavenge the DPPH radical was calculated using the formula given by Duan *et al*. Synthetic antioxidants ascorbic acid used as positive controls.

2.4 Statistical analysis:

Tests were carried out in triplicates. The mean values were calculated from the triplicate values are expressed as the mean ±SD and the differences between groups were considered to be significant if $p<0.03$.The percentage of inhibition for antioxidant was calculated using the following formula.

% of inhibition H O = ([A0] - [A1])/ ([A0] X1002

Where, (A0-Absorbance of control; A1- Absorbance of sample)

3. Results & Discussion

Water is a universal solvent, used to extract plant products. However there are certain photochemical which are not soluble in water such as condensed tannins, flavanols, coumarins etc. As the result shows, aqueous extract doesn't indicate the presence of tannin. Methanol is also a good solvent, due to its high polarity. Methanol was found easier to penetrate the cellular membrane to extract the intracellular ingredients from the plant material .But the methanol extract of the weed showed the alkaloid and steroid. This is may be due to trace amount of these metabolites in the extract. This is represented in the (Table-1)

The results representing significant antioxidant activity of the methanol extracts of *Eclipta Prostrata (L.)L* is presented Table-2. Hydrogen peroxide and super oxide can interact in the presence of certain transition metal ions to yield a highly reactive oxidizing species, the hydroxyl radical .he antioxidants react with the stable free radical DPPH (deep violet colour) and convert it to 1,1-diphenyl-2-picryl hydrazine with decolouration. The scavenging effects of extract increased with their concentrations to similar extend. *Eclipta Prostrata (L.)L* (80.13%) showed potent DPPH radical scavenging activity (Table-2) at the concentration of 100ug/ml than compared to standard ascorbic acid.

Table 1: Total antioxidant capacity in the methanol as well as aqueous extracts of *Eclipta Prostrata(L.)L*

Phytochemicals	Methanolic extract	Aqueous extract
Alkaloids	-	+
Flavanoids	+	+
Steroid	-	+
Terpenoid	+	+
Tannins	+	-
Phenols	+	+

(+) It shows that presence (-) It shows that Absence

Table 2: Scavenging effects of methanol extracts of Eclipta *Prostrata (L.)L* and standard ascorbic acid on DPPH radical

Sl. No.	Sample concentration (ug /ml)	Percentage of inhibition	
		Eclipta Prostrata	Ascorbic acid(control)
1.	**20**	31.63±2.00z	36.43±1.01z
2.	**40**	48.04±0.03z	51.19±0.04z
3.	**60**	67.19±0.06z	70.41±0.06z
4.	**80**	74.12±1.46z	74.13±1.61z
5.	**100**	80.13±2.02z	80.31±0.03z

Results are expressed as mean ±SD of the three parallel measurements.

SD values followed by common superscript letter (z) are significant

4. Conclusion

On the basis of our results its represents the methanol extract of *Eclipta Prostrata (L.)L* has the significant reaction in antioxidant activity. T he reactive oxygen species or oxidants, which re formed in the human body due to exogenous and endogenous factors , are found to be responsible for many diseases, Day by Day a lot of research works have shown the potential of phyto chemical antioxidants as health benefactors because of their ability to neutralize free radicals activity, reactive oxygen species, or oxidants responsible for the cell damage. From the above, the activity of *Eclipta Prostrata (L.)L* assayed that, the best antioxidant activity in DPPH radical scavenging activity from the above antioxidant parameters. It should be considered for the antioxidant properties and also beneficial role in their prevention of human diseases.

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