Available online at www.derpharmachemica.com

ISSN 0975-413X
CODEN (USA): PCHHAX

Der Pharma Chemica, 2017, 9(11):117-119
(http://www.derpharmachemica.com/archive.html)

Evaluation of Antioxidant Activity of Kapila Shivtrahar Lep

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ABSTRACT

Kapila Shivtrahar lep has been collected from the Aadarsh, Goseva, Avam, Anusandhan prakalpa, Akola. The quantitative evaluation of antioxidant activity was elucidated. These drugs showed antioxidant activity assay for DPPH. IC_{50} value of the drugs has also been reported in the study.

Keywords: Kapila Shivtrahar lep, Gandhak, Harad, Bhringraj, Antioxidant activity, $IC_{50.}$

INTRODUCTION

Antioxidant are the substances that inhibit the action of free radicals and Reactive Oxygen Species (ROS) and play important role in many pathological condition such as cancer, arthritis, cardiovascular diseases and liver diseases hence much attention is paid to it in recent year [1-3]. The products from plants have been used in different system of medicines viz. Unani Ayurveda and Homeopathy. In India 45,000 plant species have been identified and out of which 15-20 thousands plants are found to have good medicinal value. A large number of plants extracts are used in Indian traditional and herbal medicines. The drugs Kapila Shivtrahar lep is used for Leukoderma. It mainly contains Shuddha Gandhak, Bhringraj and Harad.

Gandhak (sulphur) is used for the cosmetic purposes as treatment of various skin diseases. The use of sulphur as ointments or creams might provide benefits for various skin conditions such as acne, eczema or psoriasis [4]. Gandhak is effective against many microbes especially fungus [5] and it is said to be best for skin disorders. Rasashastra texts have mentioned many therapeutic uses of gandhak [6]. Gandhak (sulphur) is required in human body for proper functioning. It is the third most abundant mineral (after calcium and phosphorus). Based on percentage of total body weight. It is the sixth most abundant macro mineral in breast milk. In Ayurveda Gandhak is used in treatment of variety of diseases since time immemorial.

Eclipta Prostrata is commonly known as Bhringraj. It is creeping and moisture loving herb commonly distributed on roadsides and wasteland throughout India. The plant has been reported to contain phyosterol, B-amyrin, tritepenes and coumarin such as wooderlactone [7]. The whole plant is used as a stimulant. The flowers are used for their analgesic, antispasmodic, fungicidal, digestive, bactericidal and vulnerary properties. The plant is known to have some important pharmacological activities such as antioxidant, antimicrobial, anti-inflammatory, antiviral, Hepatoprotective, immune modulatory and analgesic activity [8].

Terminalia chebula (Harad) has been extensively used in Ayurveda, Unani and Homeopathy medicine. The fruits of tree possess diverse health benefits and have been used as traditional medicines as house hold remedy [9]. The leaves, bark and fruits of T. Chebula possessed high antioxidant activity. It is used to treat digestive disorders, coronary diseases, and allergy and infection diseases like cough, fever and skin diseases [10].

MATERIALS AND METHODS

Kapila Shivtrahar lep has been obtained from the Adarsh Goseva Anusandhan prakalp, Akola.

Study of antioxidant activity by DPPH

The antioxidant activity of the Kapila Shivtrahar lep was assessed on the basis of the radical scavenging effect of the stable 1,1-diphenyl-2-picrylhydrazyl (DPPH). The diluted working solutions of the test were prepared in water. 0.004% of DPPH was prepared in ethyl alcohol and 3 ml of this solution was mixed with 3 ml of sample solution. These solution mixtures were kept in dark for 30 min and optical density was measured at 517 nm using UV Visible spectrophotometer. Alcohol (3 ml) with DPPH solution (0.004%, 3 ml) was used as blank. The optical density was recorded and % inhibition was calculated using the formula given below

$$\text{Percentage (\%) Inhibition of DPPH (\% AA)} = \frac{A-B}{A} \times 100$$

Where A=Optical density of the blank and B=Optical density of the sample.

RESULTS AND DISCUSSION

The stock solution 1 mg/ml of alcohol was prepared. The required dilutions 0.1 mg/ml to 0.9 mg/ml were prepared by appropriate dilutions. The optical density and percent antioxidant activity was calculated (Table 1; Figures 1 and 2).

Table 1: Optical density and percent antioxidant activity for Kapila Shivtrahar lep O.D of blank DPPH=1.847

Conc.mg/ml	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
O.D. of sample	0.945	0.748	0.67	0.792	0.796	0.813	0.816	0.845	0.850
%AA	48.83	60.17	63.72	57.11	56.90	55.98	55.82	54.25	53.97

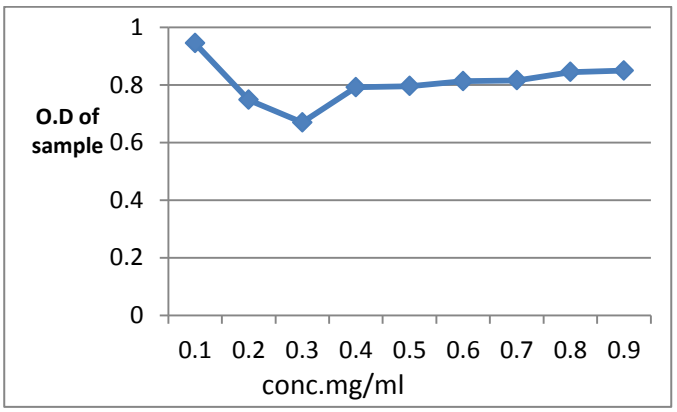

Figure 1: Decrease in optical density of sample with increase in concentration Kapila Shivtrahar lep

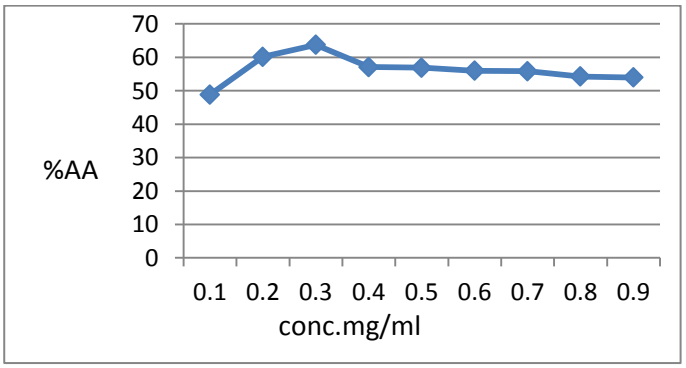

Figure 2: Decrease in percent antioxidant activity with increase in concentration of Kapila Shivtrahar lep

Calculation of IC_{50}=max-½ (max-min)
= 63.72- ½ (63.72-53.97)
= 63.72-4.87
= 58.85
IC_{50} value corresponding to Kapila Shivtrahar lep is 0.15 mg/ml.

CONCLUSION

The results obtained for the antioxidant assay by DPPH for Kapila Shivtrahar lep are reported. Rremarkable decrease in O. D. value of sample for Kapila Shivtrahar lep was observed from the graph, showed antioxidant activity. The IC_{50} value for Kapila Shivtrahar lep was found to be 0.15 mg/ml.

ACKNOWLEDGEMENT

The author is thankful to the Aadarsh Goseva Avam Anusandhan prakalpa Akola, For providing the Ayurvidic medicine. The authors are also thanksful to the Management & Principle of Shankarlal Khandelwal College Akola, For provided necessary facilities.

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