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ANTI-OXIDANT ACTIVITY OF SIDDHA POLY HERBAL FORMULATION ELA PODI

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ABSTRACT

There are so many traditional systems flourishing all over the world, one among them is Siddha system of medicine. Siddha system mainly lay stress on healthy long life by rejuvenating body cells. Oxidative stress is a condition of imbalance between radical scavenging and radical generating systems. Antioxidant has the ability to neutralize the free radical without formation of another free radical by donating electrons. Here, *Ela podi*, a Siddha drug was tested for its antioxidant activity. Test results showed high scavenging activity of 61.35% inhibition with IC_{50} Value of 122.305µg/mL.

KEYWORDS: Antioxidant, Elapodi, Siddha system.

INTRODUCTION

The supply of oxygen is absolutely essential for the existence of higher organisms. Very high concentrations of O_2 are found to be toxic, and can damage tissues. The present day concept of oxygen toxicity is due to the involvement of oxygen free radicals or reactive oxygen species. In fact, the generation of reactive metabolites of O_2 is an integral part of our daily life. Oxygen is required in many metabolic reactions, particularly for the release of energy. During these processes molecular O_2 is completely reduced and converted into water. However, if the reduction of O_2 is incomplete, a series of reactive radicals are formed which are harmful to human body.[1]

The substances which can prevent the occurrence of oxidative rancidity are known as antioxidants. Traditional medicines are having potential to prevent the formation of free radicals. *Ela podi* is a poly herbal formulation mentioned in Siddha system of medicine, a

traditional system in South India. In Siddha system, medicines are classified into 32 types of Internal and 32 types of External medicines. *Ela podi* is a powdered form of drug which comes under internal medicine category. According to Reza Sharafati-Chaleshtori *etal* the anti oxidant capacity of *Elettaria cardamomum* was lower which when compared to standard antioxidant butylated hydroxytoluene (BHT).[2] *Embilica officinalis* extracts were capable of scavenging hydroxyl free radicals (Alexander N. Shikov *etal*).[3] Biwapriya B. Misra *etal* reported that Sandalwood callus extract exhibited comparable antioxidant activity with sandalwood oil better than reference antioxidant compounds such as gallic acid, α-tocopherol, quercetin, squalene.[4] *E. cardamomum, Embilica officinalis* and Sandalwood were studied separately for their antioxidant property. Their combined radical scavenging effect has been shown in this article.

MATERIALS AND METHODS

Details regarding sample

The drug *Ela podi* is mentioned in Siddha text book *Gunapadam Part I* indicated for cough and stomach pain.[7]

Drug collection and authentication

All the ingredients of the drug are bought in Ramasamy chetty country drug shop, Parrys, Chennai and authenticated at Dept of Botany, Govt Siddha Medical College, Chennai.

Table 1: Ingredients of Ela podi.

Tamil name	Botanical name	Parts used
Elarisi	*Elettaria cardamomum*	Seed
Athimathuram	*Glycyrrhiza glabra*	Root
Nelli vattral	*Embilica officinalis*	Dried fruit
Santhanam	*Santalum album*	Wood
Vaal milagu	*Piper cubeba*	Seed

Details regarding experiment

DPPH radical scavenging assay

The radical scavenging activity of different extracts was determined by using DPPH assay according to Chang et al [2001]. The decrease in the absorption of the DPPH solution after the addition of an antioxidant was measured at 517 nm. Ascorbic acid (10mg/ml DMSO) was used as reference.

Reagent preparation

0.1mM DPPH solution was prepared by dissolving 4mg of DPPH in 100ml of ethanol.

Procedure

Different volumes of extracts 1.25µl - 20µl (12.5 - 200µg/ml) from a stock concentration 10mg/ml were made up to a final volume of 20µl with DMSO and 1.48ml DPPH (0.1mM) solution was added. A control without the test compound, but an equivalent amount of distilled water was taken. The reaction mixture incubated in dark condition at room temperature for 20 minutes. After 20 minutes, the absorbance of the mixture was read at 517nm. 3ml of DPPH was taken as control.

RESULTS AND DISCUSSION

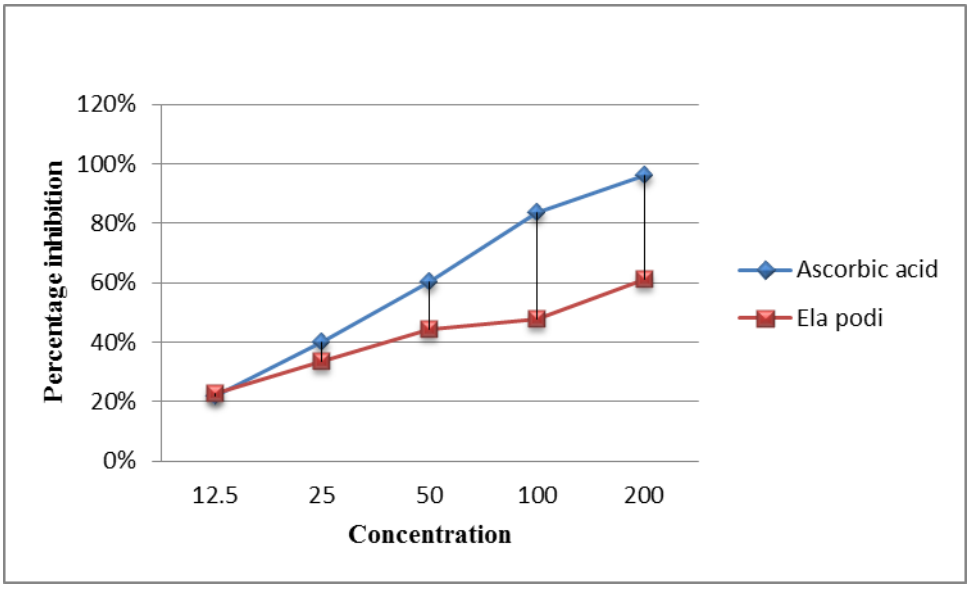

Figure 1: DPPH radical scavenging activity of *Ela podi.*

DPPH test is a direct and reliable method for the determination of radical scavenging action. This test is based on the ability of DPPH a stable free radical, to decolourize in the presence of antioxidants. The DPPH radical contains an odd electron which is responsible for the absorbance at 515-517 nm and also for deep purple colour. When DPPH accepts an electron donated by an antioxidant compound, the DPPH is decolourized which can be quantitavely measured from the changes in absorbance.[8] Ascorbic acid was used as standard for comparison. *Ela podi* showed high scavenging activity of 61.35% inhibition with IC_{50} Value of 122.305µg/mL. The antioxidant effect of plant products is mainly due to the presence of flavonoids, polyphenols, tannins and phenolic terpenes (Rahman and Moon, 2007).

CONCLUSION

The test result proved that *Ela podi* has anti-oxidant activity with highest inhibition of 61.35%. The sample drug was tested with one method here for assessing radical scavenging activity. Subjecting the drug *Ela podi* to other methods for its anti-oxidant property may give more results. The preparation of *Ela podi* is simple, cost effective and it is indicated for cough and stomach pain. Since it also has anti-oxidant property, besides foresaid indication it can also rejuvenates our body.

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