Antioxidant Activity of Four Sources of Sariva by In Vitro Method

Dr Vidyalaxmi Pujari MD, PhD Scholar, Guide : Dr Shrikanth P MD PhD

Dept of Dravyaguna , SDMCA, UDUPI – Rajiv Gandhi University of Health sciences, Banglaore

Abstract

Antioxidants are nature's way of protecting the body cells from damaging free radicles. Antioxidants can be broadly defined as any substance that delays or inhibits oxidative damage to a target molecule. The human body has its own defense system against the oxidation, generation of free radicals in the form of hormones, cell enzymes, vitamin A, E, B. when the critical balance between free radical generation & antioxidant defenses is unfavorable the oxidation stress occurs which may lead to many health issues. In Ayurveda many drugs are attributed with Rasayana property, Sariva is the one amongst them. Two types of Sariva are mentioned in classics & four sources are there in the market in the name of Sariva. In this present study, the four sources of Sariva are identified and collected from their natural habitat and screened for their antioxidant activity by DPPH and Total Phenolic Essay methods. Results suggest that all the four sources of Sariva has shown antioxidant activity, some are of Primary type & Some are of secondary type of antioxidants.

Discussion

In the DPPH Assay, the standard used was Vitamin C, The DPPH Assay shows Decalepis hamiltonii has highest antioxidant activity. This suggests Decalepis hamiltonii is primary type of antioxidant as it donates the ion to free radical and stabilizes it.

In the total phenolic content, Gallic acid being the standard assay suggests Ichnocarpus has highest amount of phenolic content, thus acts as secondary antioxidant, as phenols are the secondary antioxidants which stops the generation of free radical.

Introduction

Antioxidants are nature's way of protecting the body cells from damaging free radicals.The body is under constant attack from oxidative stress, oxygen in the body splits into single atoms with unpaired electrons.

Electrons like to be in pairs, so these atoms are called free radicals. These free radicals are unstable atoms that can damage cells proteins & DNA, causing illness & rapid aging. The human body has its

own defense system against the oxidation, generation of free radicals in the form of hormones, cell enzymes, vitamin A, E, B. When critical balance between free radical generation & antioxidant defenses is unfavorable the oxidation stress occurs

which may lead to many hazardous health issues Sariva is the drug which is tributed with antoxidant activity, as it has 4 sources , Hemidesmus indicus, ichnocarpus frutiscens are classically explained & other two Decalepis hamiltonii & Cryptolepis buchnani are also used in the name of Sariva.

Hence In this research work, all the four sources of

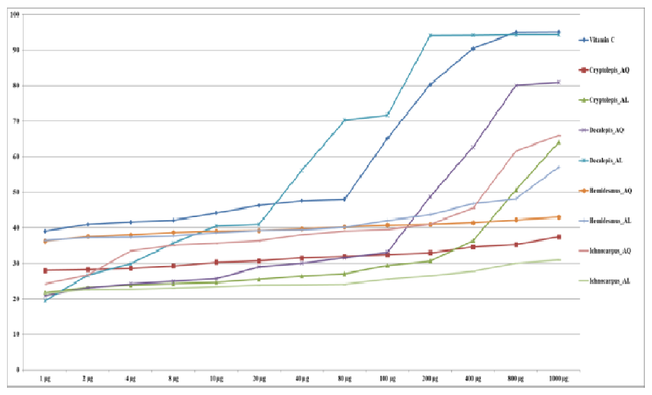
Materials and methods

- DPPH : This essay was carried out based on the method of Costa et al. (2012) and Plank et al. (2012) with slight modification. 0.1mm of methanolic DPPH stock solution was prepared freshly using 10mg DPPH dissolved in 125 ml methanol in a 250 ml volumetric flask. 0.4ml diluted sample or standard solution was added into test tube containing 5.6 ml Methanolic DPPH. Test tubes sealed with parafilm were incubated in water bath(Memmert, Germany) at 37 0 C for 30 min. The absorbance was measured against methanol(Blank) at 517 mm UV- Visual spectrophotometer Trolox calibration solutions of 50- 500 um concentration were used to generate the standard curve. The results were expressed as umol TE/ 100 ml.
- Total Phenolic Content: The phenolic content of juices was determined spectrophotometrically

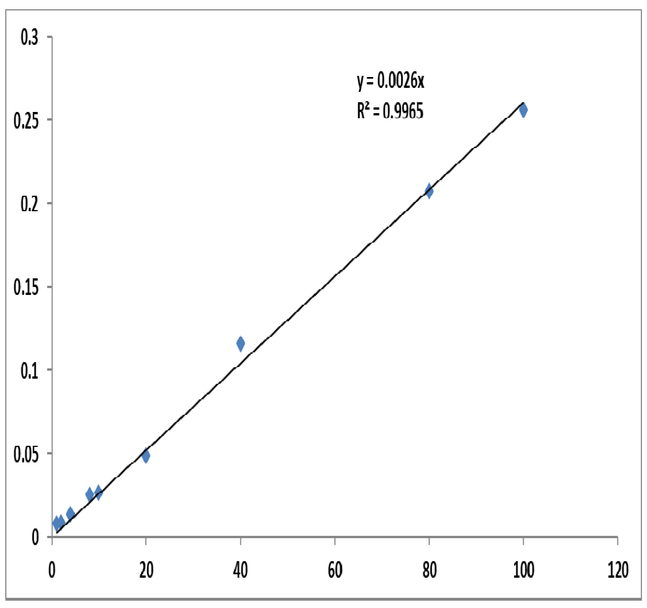
according to Folin– Ciocalteu method with slight modification by Mahadevi et al. (2010) and Singleton & Rossi (1965). An amount of 0.4 ml sample or standard solution was added into 10 ml volumetric flask, containing 3.6 ml of distilled water. Folin- Ciocalteu reagent(0.4) was added into the mixture. About 4ml of 7% sodium carbonate was also added following 5 min. The solution was made up to 10 ml with distilled water, mixed thoroughly and allowed to stand at room temperature for 90 min. The absorbance was measured at 765nm using UV- Visual spectrophotometer(Secomam Prim, France) against distilled water as blank. Calibration curve was plotted using Gallic acid standard solution of 0- 250 mg/L. The result was expressed (mg GAE/100ml)

Results

Graphical presentation of DPPH assay of all samples



Graphical presentation of Total phenolic assay



Conclusion

In Ayurveda many herb drugs are attributed with Rasayana karma, which can be understood in terms of antioxidant activity. Sariva is one such drug. In this work, the four sources of Sariva were screened for its Antioxidant activity by In-vitro methods; DPPH & Total Phenolic Essay. In DPPH method *Decalepis hamiltonii* showed highest antioxidant activity, it suggest *Decalepis hamiltonii* is Primary type of antioxidant, which donates the ion to free radical & stabilizes it. In Total Phenolic Content, Phenolic content was more in *Ichnocarpus frutescens.* Phenols are the secondary type of natural antioxidants which stops the generation of free radicals. From this work, it can be conclude that, the sources of Primary & Secondary antioxidants are further should be tested by In Vivo method as to know the exact mechanism of action in living cell.

References

1. Costa et al. (2012)& Plank et al. (2012)

2. Comparison of Total phenolic contents(TPC) and Antioxidant activities of Fresh Fruit Juices, Commercial 100% Fruit juices and Fruit Drinks.