Research Paper Biological Science

Anti-Oxidant Studies on Arbudhcure From Aswathy Medical Hall

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ABSTRACT

The current investigation deals with the extraction using alcohol the on ARBUDHCURE using the Reflux apparatus. The extract was then subjected to in-vitro anti-oxidant studies for the identification of the free radical scavenging property of the medicine. The in-vitro study performed using DPPD method revealed that the ayurvedic drug possess significant activity. This medicine is being used for the treatment of cancer in Aswathy Medical Hall, thus this work support the anti-cancer activity which was already done by the authors [1].

KEYWORDS : Arbudhcure, Anti-oxidant, Anticancer, Ayurvedic Drug, DPPH Assay

INTRODUCTION

Antioxidants are intimately involved in the prevention of cellular damage -- the common pathway for cancer, aging, and a variety of diseases. Athletes have a keen interest because of health concerns and the prospect of enhanced performance and/or recovery from exercise. The purpose of this article is to serve as a beginners guide to what antioxidants are and to briefly review their role in exercise and general health[2].

Free radicals are atoms or groups of atoms with an odd (unpaired) number of electrons and can be formed when oxygen interacts with certain molecules. Once formed these highly reactive radicals can start a chain reaction, like dominoes. Their chief danger comes from the damage they can do when they react with important cellular components such as DNA, or the cell membrane. Cells may function poorly or die if this occurs. To prevent free radical damage the body has a defense system of antioxidants[3].

Antioxidants are molecules which can safely interact with free radicals and terminate the chain reaction before vital molecules are damaged. Although there are several enzyme systems within the body that scavenge free radicals, the principle micronutrient (vitamin) antioxidants are vitamin E, beta-carotene, and vitamin C. Additionally, selenium, a trace metal that is required for proper function of one of the body's antioxidant enzyme systems, is sometimes included in this category. The body cannot manufacture these micronutrients so they must be supplied in the diet [4].

MATERIALS AND METHODS

COLLECTION AND AUTHENTIFICATION OF SAMPLE

The samples were collected from Aswathy Medical Hall and authenticated from the Taxonomy Department of Uwin Life Sciences, Malappuram. The sample specimen was stored in Uwin Life Science, Malappuram. The collected specimens were then coarsely powdered[5].

EXTRACTION

10 gm of the dried powder was extracted using alcohol under relux for 30 minutes thrice. The extracts were then clubbed, filtered and concentrated to dryness in a rotary evaporator. It was then dissolved in 25 ml of alcohol and this extract was used for the in-vitro DPPH assay[6,7].

DPPH ASSAY[8]

- Antiradical activity was measured by a decrease in absorbance at 517 nm of a solution of colored DPPH in methanol brought about by the sample.
- A stock solution of DPPH (1.3 mg/ml in methanol) was prepared such that 75 µl of it in 3 ml methanol gave an initial absorbance of 0.9.
- Decrease in the absorbance in the presence of sample extract and standard at different concentrations was noted after 30 Minutes.
- EC50 was calculated from% inhibition. A blank reading was taken using methanol instead of sample extract .
- Absorbance at 517 nm is determined after 30 min. using UV-visible Spectrometer(Systronic double beam- UV-2201), and IC50 (Inhibitory concentration to scavenge 50% free radicals) is also determined. Lower the absorbance of the reaction mixture indicates higher free radical scavenging activity.
- IC50 value denotes the concentration of sample required to scavenge 50% of the DPPH free radicals.

The capability to scavenge the DPPH radical was calculated using the following equation.

Percentage Inhibiton = C-T/A X 100

Where C = Absorbance of DPPH alone

T = Absorbance of DPPH along with different concentrations of extracts.

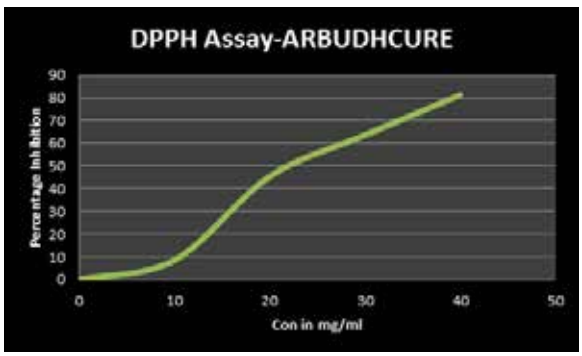
IC_{50} was calculated from equation of line obtained by plotting a graph of concentration versus % inhibition

RESULTS

No	Sample Concentration In mg/ml	DPPH ASSAY of Aswathy Powder		DPPH ASSAY of Standard Gallic acid	
		OD	Percentage Inhibition	OD	Percentage Inhibition
1	Control 0.00	2.20	0.00%	2.20	0.00%
2	10	2.01	8.63%	2.10	4.54%

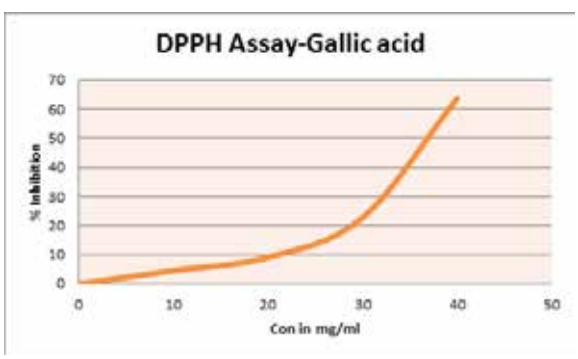
No	Sample Concentration In mg/ml	DPPH ASSAY of Aswathy Powder		DPPH ASSAY of Standard Gallic acid	
		OD	Percentage Inhibition	OD	Percentage Inhibition
3	20	1.20	45.45%	2.00	9.09%
4	30	0.80	63.63%	1.70	22.72%
5	40	0.40	81.28%	0.80	63.63%

Table showing the OD values and percentage inhibition in various concentration of **Arbudhcure** and the standard drug Gallic acid.



Graph showing the % inhibition in different concentrations of Arbudhcure

EC 50 =22 mg/ml



Graph showing the % inhibition in different concentrations of **Arbudhcure**

EC 50 =35 mg/ml

CONCLUSION

The authors were already worked and published on the phytochemistry of the **Arbudhcure** and revealed that the Medicine ARBUDHCURE contains a variety of secondary metabolites like flavonoids, alkaloids etc. This works revealed the free radical scavenging of the **Arbudhcure**. The positive which we has taken was Gallic acid which is very known anti-oxidant agent. The Gallic acid shows an EC 50 of 35mg/ml but the significant thing is the **Arbudhcure** showed more activity the Gallic acid. It showed an activity with an UC 50 of 22 mg/ml. The **Arbudhcure** is a multiherbal drug, the Gallic acid is single known drug so the EC 50 less than that of a known drug is very significant.

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