



Antioxidant activity of Mathiyoshna Rasayanam

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Abstract

Mathiyoshna Rasayanam is an excellent polyherbal formulation used in Siddha. It composed of 30 different herbal ingredients. It is mainly used for the treatment of degenerative disorder and wound healing. The aim of this presentation is to check on the antioxidant property of Mathiyosna rasayanam. It can be done by studying its DPPH free radical scavenging activity.

Keywords: Antioxidant, Mathiyoshna Rasayanam, DPPH, Siddha, Degenerative disorder.

Introduction

Siddha is one of the ancient medicine system and it is unparalleled one in protecting human health. Siddha medicines are so effective in therapeutic aspect as well as in prophylaxis. Its special features are the absence of side effects and recurrence of the disease which was cured by Siddha Medicine.

Mathiyoshna Rasayanam is a wonderful medicine which is the combination of 30 herbals. Its major component is Parangipattai. Most of the herbals in the mathiyosna Rasayanam have the ability to rejuvenate the body cells. They also

neutralize the trithodas (vatha, pitha, kaba). The evidence of, Mathiyosna Rasayanam being used in the treatment degenerative disorder and skin disease can be seen as mentioned in siddha literature Yoogimuni Vaidhiya Kaviyam. So as such, Mathiyosna Rasayanam has been traditionally used to treat the above mentioned disease.

Now coming to the antioxidant property of Mathiyoshna Rasayanam, which still has not been studied and proved. Antioxidants are the molecules which prevent the formation of free radicals by inhibiting the oxidation. Accumulation of free radicals can damage the components like

lipid, protein etc. They also cause strand breaks in DNA and thus damaging the body cells. As such it can lead to disease like cancer, degenerative disorder etc. Accumulation of free radicals is one of the important causes of aging. Natural antioxidants prevent the brain tissue damage by

oxidative stress. So it can be understood that taking antioxidants is a must. So Mathiyosna Rasayanam in which most of its components having the antioxidant property would be the best choice.

Materials and Methods

Table: 1 Ingredients of Mathiyosna Rasayanam

S.No	Ingredient	Botanical name	Part used	Measurement
1	Paranki pattai	<i>Smilax china</i>	Root tube	10palam(350 grams)
2	Jathipathri	<i>Myristica fragrans</i>	Pericarp	¼palam(8.75grams)
3	Milagu	<i>Piper nigrum</i>	Unripened fruit	¼palam(8.75grams)
4	Vaivilangam	<i>Embelia ribes</i>	Dried fruits	¼palam(8.75grams)
5	Chukku	<i>Zingiber officinale</i>	Dried rhizome	¼palam(8.75grams)
6	Santhanam	<i>Santalum album</i>	Wood	¼palam(8.75grams)
7	Kadukkai	<i>Terminalia chebula</i>	Pericarp	¼palam(8.75grams)
8	Thippili	<i>Piper longum</i>	Fruit	¼palam(8.75grams)
9	Nelli paruppu	<i>Phyllanthus emblica</i>	Dried fruit	¼palam(8.75grams)
10	Lavanga pattai	<i>Cinnamomum verum</i>	Bark	¼palam(8.75grams)
11	Ealakkai	<i>Elettaria cardamomum</i>	Seed	¼palam(8.75grams)
12	Kirambu	<i>Syzygium aromaticum</i>	Flower buds	¼palam(8.75grams)
13	Thanri kaai	<i>Terminalia bellirica</i>	Dried fruit	¼palam(8.75grams)
14	Sevviyam	<i>Piper nigrum</i>	Root	¼palam(8.75grams)
15	Jeeragam	<i>Cuminum cyminum</i>	Seed	¼palam(8.75grams)
16	Thippili moolam	<i>Piper longum</i>	Root	¼palam(8.75grams)
17	Kandu parangi	<i>Clerodendrum serratum</i>	Leaf	¼palam(8.75grams)
18	Vetpalai	<i>Wrightia tinctoria</i>	Leaf	¼palam(8.75grams)
19	Arathai	<i>Alpinia galanga</i>	Rhizome	¼palam(8.75grams)
20	Vaaluluvai arisi	<i>Clestrus paniculatus</i>	Seed	¼palam(8.75grams)
21	Korai kilangu	<i>Cyperus rotundus</i>	Root tuber	¼palam(8.75grams)
22	Nannari	<i>Hemidesmus indicus</i>	Root	¼palam(8.75grams)
23	Kostam	<i>Costus speciosus</i>	Rhizome	¼palam(8.75grams)
24	Sadaamaanjil	<i>Nardostachys grandiflora</i>	Root	¼palam(8.75grams)
25	Annachipoo	<i>Illicium verum</i>	Root	¼palam(8.75grams)
26	Adhimathuram	<i>Glycyrrhiza glabra</i>	Root	¼palam(8.75grams)
27	Kaattu milagu	<i>Piper nigrum</i>	Seed	¼palam(8.75grams)
28	Krosani Omam	<i>Hyoscyamus niger</i>	Seed	¼palam(8.75grams)
29	Omam	<i>Carum copticum</i>	Seed	¼palam(8.75grams)
30	Mullai ver	<i>Jasminum trichotomum</i>	Root	¼palam(8.75grams)
31	Honey			325 ml
32	Ghee			Equal to all remaining parts

Collection of drug:

All above drugs are purchased from commercial raw drug store.

Authentication:

All the drugs were Authenticated by Botanist, Dr.S.Sutha M.Sc., M.Ed., Ph.D., Associate Professor, Dept. of Medicinal Botany, GSMC, Palayamkottai, Tamilnadu India.

Purification of drug:

- Raw drugs will be heated to a golden brown color and cooled it.
- In kadukkai seed is removed.
- Parangipattai should be dried and pulverized. Then should be boiled by steam of milk.
- In chukku outer skin to be removed.
- All roots to be cleaned thoroughly by water and dried in shadow.

Method of preparation

- The purified dried raw drugs are powdered and sifted well separately
- Equal quantity of each powdered drugs are then mixed well. Add honey and ghee and mix well to make it like a pittu.

DOSE: 6 gram / bid

Indication: degenerative disease, skin diseases, wound healing.

In-vitro antioxidant activity of *Mathiyooshna Rasayanam*:-

DPPH Radical scavenging activity

Reagents

- Diphenyl-2-picrylhydrazyl (DPPH)
- Methanol

Principle:

The DPPH assay method is based on the reduction of DPPH, a stable free radical. The free radical DPPH* with an odd electron gives a maximum absorption at 517 nm (purple color). When antioxidants react with DPPH*, which is a stable free radical; it becomes paired off in the presence of a hydrogen donor (e.g., a free radical-scavenging antioxidant) and is reduced to the DPPH-H form, results in decolorization (yellow color) with respect to the number of electrons captured. More the decolorization more is the reducing ability. When a solution of DPPH is mixed with that of a substance that can donate a hydrogen atom, it gives rise to the reduced form (Diphenylpicrylhydrazine; non radical) with the loss of this violet colour and as consequence the absorbance decreases. The degree of discoloration indicates the scavenging potential of the antioxidant compounds or extracts in terms of hydrogen donating ability.

Procedure

The hydrogen donating ability of L1 M1 was examined in the presence of DPPH stable radical. One milliliter of 0.3 mm DPPH methanol solution was added to 1 ml of MEAL (1000 µg/ml) at different concentration and allowed to react at room temperature. After 30minutes the absorbance values were measured at 517 nm. Methanol solution was used as a blank and DPPH solution (1.0 ml, 0.3 mm) with 1 ml methanol served as negative control. Ascorbic acid (1000 µg/ml) was taken as the positive control. The capability to scavenge the DPPH radical was calculated using the following equation

$$\% \text{ inhibition} = \frac{A_{\text{control}} - A_{\text{test}}}{A_{\text{control}}} \times 100 \text{ ---- (1)}$$

Where 'A_{control}' was the absorbance of the control reaction and 'A_{test}' was the absorbance in the presence of the extract/standard. The mean values were Obtained from triplicate analysis.

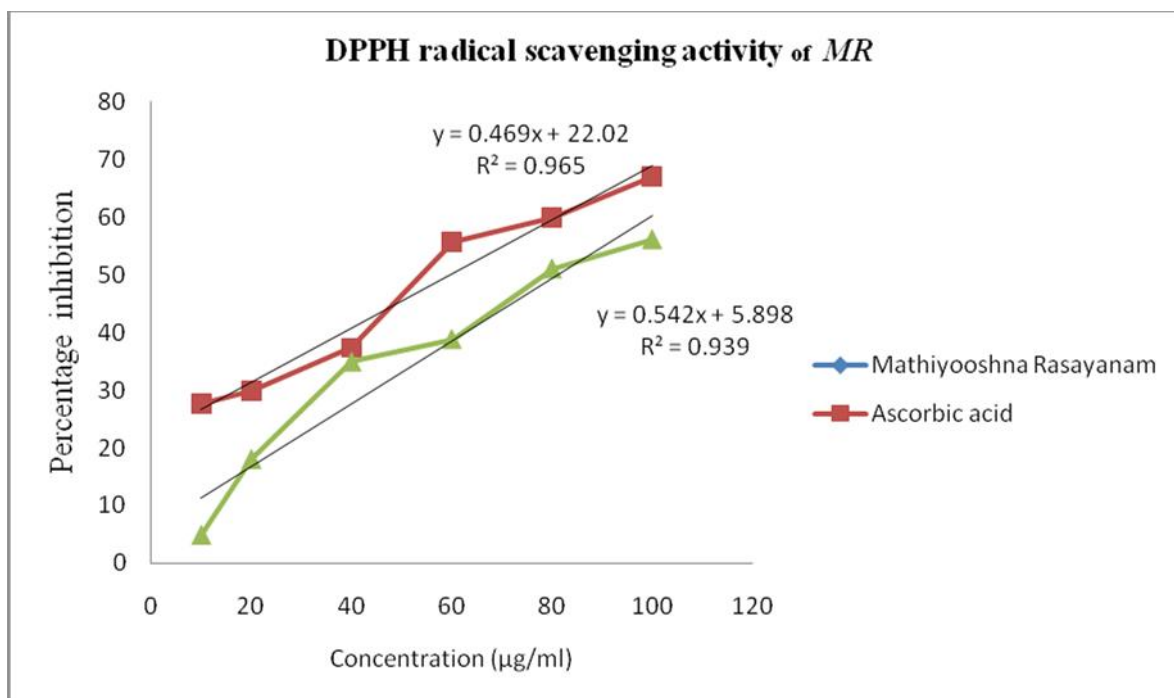
The antioxidant activity of the extract was *fed. Sci. (2018), 4(5): 71-75* expressed as IC₅₀

Results and Discussion

DPPH radical scavenging activity

% inhibition and IC 50 values of DPPH radical by *Mathiyooshna Rasayanam*

S.No	Concentration µg/ml	Ascorbic acid (Standard)	Ascorbic acid (Standard)	<i>Mathiyooshna Rasayanam</i>	<i>Mathiyooshna Rasayanam</i>
		Absorbance	Percentage inhibition	Absorbance	Percentage inhibition
1	10	0.313	27.71	0.412	4.849
2	20	0.303	30.2	0.355	18.01
3	40	0.281	34.87	0.282	34.87
4	60	0.192	55.65	0.265	38.80
5	80	0.174	59.81	0.212	51.03
6	100	0.143	66.87	0.190	56.12
	Ic 50 values		Ic 50 =59.65		Ic 50 = 81.36



In this study antioxidant potential of *Mathiyooshna Rasayanam* was determined by using DPPH assay and ascorbic acid as standard compound. The DPPH is a stable radical with a maximum absorption at 517 nm that can readily

undergo scavenging by antioxidant. It has been widely used to test the ability of compounds as free-radical scavengers or hydrogen donor and to evaluate the antioxidant activity of plants. The

Conclusion

Mathiyoshna rasayanam has been proved of its antioxidant property. Thus it can be the best choice in treating disease like degenerative disorder, wound healing etc .As such this presentation would be of great help in standardizing the Mathiyoshna Rasayanam, and also further research on the same. Taking antioxidant in herbal form, the best choice being the Mathiyoshna Rasayanam, would be of great help in preventing many diseases.

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