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Analyzing The Impact Of Antioxidant Property Of Garcinia Indica

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ABSTRACT

Garcinia indica choisy is the important indigenous tree spice crops cultivated in Asian countries and acknowledged by different names. A lot of therapeutic effects of the fruit were discussed in Ayurveda, which include the usefulness of its as an infusion and in epidermis ailments for example rashes triggered by allergies; in treatment of burns, scalds & chaffed epidermis; as a treatment for dysentery and also mucous diarrhea; as an appetizer along with a great liver tonic; as a cardio tonic and for bleeding, piles, tumors as well as heart diseases and also possess antiulcer, antibacterial, antifungal, anti-inflammatory and antioxidant activity. Antioxidant property of Garcinia indica have been studied by using different solvent extracts with different concentrations. The good free radical scavenging activity was found in Ethyl acetate extract at 20mg/ml concentration.

Keywords: Garcinol, Antioxidant property, DPPH.

I. INTRODUCTION

Garcinia indicaChoisy (*Family: Clusiaceae/Guttiferae*), a slender evergreen tree is actually endemic to probably the west coast of India (Khare C.P.,2007) It's a number of culinary, industrial and pharmaceutical uses. The dried rind known as "kokum" is actually an Indian spice as well as condiment used in numerous areas of the nation to make a number of "curry" preparations. Syrup made out of the fruits is actually a healthy soft drink used throughout summer to alleviate sun's rays stroke (Panda V. et al.,2012).

Kokum seed is a great source of extra fat called Kokum butter which is actually utilized in chocolate and confectionary business and cosmetic and pharmaceutical market as surfactant Kokum fruit is actually a possible source of hydroxy citric acid, anthocyanins and a polyisoprenylated benzophenone derivative, garcinol(Padhye S et al, 2009). Kokum containing Minerals, and B-complex vitamins, potassium, magnesium and manganese, which help in controlling heart rate as well as blood pressure, offering safety against coronary heart diseases and stroke. This versatile fruit has been employed to counter intestinal issues for

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example indigestion, flatulence, constipation as well as acidity. Kokum fruit possess anti-ulcer activities, cardio protective, antibacterial, anti-inflammatory, anti-fungal, anti-cancer, chelating, and useful antioxidant(Sang S. et al, 2002, Manikanta P., 2004).

Kokum (Garcinia indica Choisy) is actually among the necessary indigenous tree spice crops originated as well as cultivated in Western Ghats of India, South Konkan region of Maharashtra, Coorg, Goa and Wayanad, coastal areas of Kerala and Karnataka, evergreen forests of Assam, Jantia hills, Khasi, West Gujarat and Bengal and it is in evergreen & semi evergreen forests and as a home garden tree(Subhashchandran MD, 2005, Shrikant Baslingappa, 2014).Antioxidants are micronutrients which have received importance recently because of the power or maybe the behavior to neutralize free radicals.(Mishra A et al, 2006**)**

Chemical Composition of Kokum

Kokum rind has 3 essential chemical constituents' viz, Garcinol, Hydroxycitric acid as well as anthocyanin pigment. Garcinol is actually a fat soluble yellowish pigment; Hydroxycitric acid is actually utilized as an acidulant and physiologically energetic compound has been proven to considerably decrease body weight.

One other constituent from G. indica, Garcinol, a polyisoprenylated benzophenone has been reported to be an antioxidant a glycation inhibitor, along with an antiulcer, antibacterial, anticancer agent(Devasgayam TPA et al, 2006, Rukachaisirikul V. et al, 2005, Mantelingu K et al, 2007). Apart from garcinol and HCA, kokum includes some other compounds such as citric acid, malic acid, polyphenols, ascorbic acid and anthocyanin pigments ,carbohydrateswith powerful antioxidant properties**(**Peter K, 2001,Padhye S et al, 2009**).** HCA as well as its derivative is anti-obesity agent, it suppresses fatty acid synthesis, lipogenesis and food consumption (Jena BS et al, 2002, Yamaguchi F et al, 2000)

II. MATERIALS AND METHODS

The extraction of kokum pericarp in THFconcentrate indicated greatest antioxidant action and free radical scavenging activities in vitro conditions. Moreover, the antioxidant action was observed to be diverse for various types of dissolvable extracts. [Fu C et al, 2010]

Preparation of extracts:

20 g dried samples of Garcinia indica weighed and each sample added with 100 ml of solvents namely ethyl acetate, THF and cyclohexane. They were kept at 37^0C for 24 hours

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and extracted by soxhlet extraction apparatus. It is then subjected to drying under controlled atmosphere and temperature using vacuum evaporator. The dried material was further used for DPPH activity at different concentrations of extracts at 20mg/ml, 50 mg/ml, 75 mg/ml and 100 mg/ml. 0.2 mM DPPH solution is prepared. In 3ml of each concentration solution of each solvent extract, 200µl of 0.2 mM DPPH solution added, shake vigorously and kept standing 30 mins. in dark. Thereafter it is used for spectral scanning at 517 nm.[Fayaz Pasha P et al, 2014]

III. Result and Discussion: Table 1: Antioxidant Property of Garcinia indica

DPPH method is used to study antioxidant activity of different solvent extracts of kokum fruit rind.

To study antioxidant activity of garciniaindica three solvent extracts were used namely Ethyl acetate, THF, Cyclohexane at different concentration of 20 mg/ml, 50 mg/ml, 75 mg/ml, 100 mg/ml. The good antioxidant activity was found in 20 mg/ml Ethyl acetate extract which exhibit 92.39 % inhibition of DPPH free radical, while 20 mg/ml of THF and cyclohexane extract of fruit exhibited 78.56 and 77.91moderate percentage respectivel

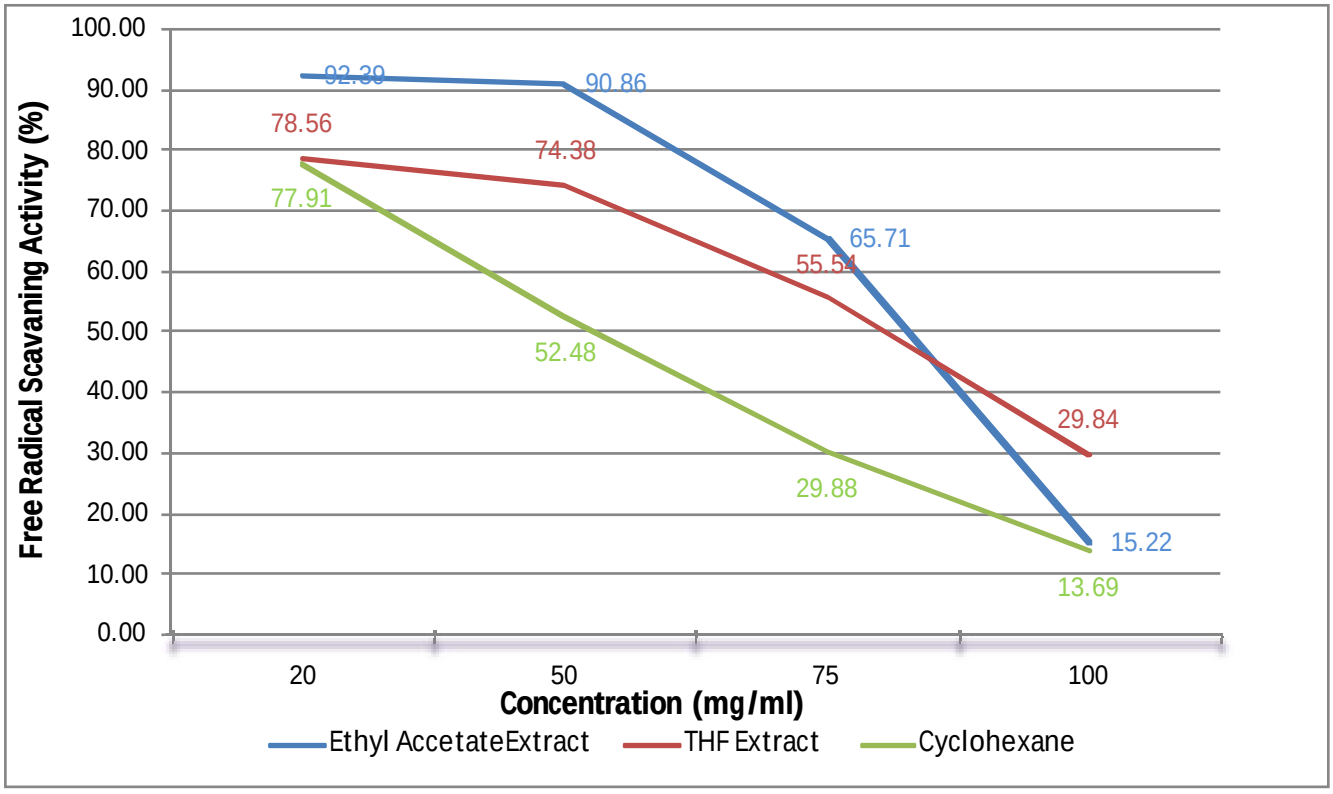

Figure 2: Figure showing Antioxidant Property of different solvent extracts Garcinia indica

IV. CONCLUSION

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From the above study, it was observed that as the concentration increases antioxidant activity goes on decreases because antioxidant activity may suppressed by other constituents of Garcinia in high concentration.In Ethyl acetate extract it shows good activity upto 75mg/ml. Whereas in THF activity is 78 to 74% shows activity is almost maintainupto 50 mg/ml but in higher concentration extract sudden decrease in activity indicates that activity is affected by other constituent of Garcinia fruit.

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