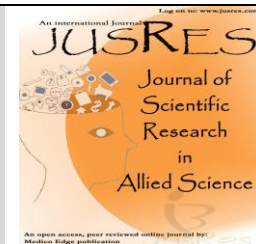




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Synthesis and Chemical Evaluation of Phytoconstituents

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ABSTRACT

An assessment of the previous trends and impact of research into the Phytochemistry on medicinal plants of the world is quite desirable before considering recent trends. After centuries of empirical use of herbal preparation, the first isolation of active principles alkaloids such as morphine, strychnine, quinine etc. The evaluation of medicinal plants on a large scale for different biological activities is the first essential step to isolate and characterize the active principles which will lead to drug development. Thus, the present study helped in identifying phytoconstituents present in the drugs and its fractions which are responsible for various biological activities.

ORIGINAL RESEARCH ARTICLE

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INTRODUCTION

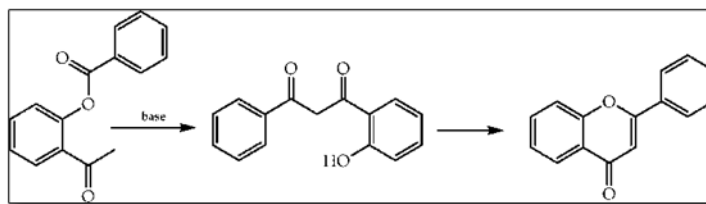
Phytochemicals are naturally present in many foods but it is expected that through bioengineering, new plants will be developed, which will contain higher levels. This would make it easier to incorporate enough phytochemicals into the food. Phytochemical research has been able to coexist with biostatistics smoothly. The study of how chemicals from plants may potentially affect humans and other organisms has been objectified and quantified through statistics. Experimental agents from natural products are offering us a great the opportunity to evaluate new chemical classes of medicinal agents, as well as novel and potentially relevant mechanisms of action. [1] Despite the achievements of synthetic chemistry and the advances towards rational drugs design, natural products will continue to be important in three areas of drug discovery. There has been a universal trend in recent times towards using natural phytochemicals found in teas, berry

crops, herbs, vegetables, fruits and beans. Moreover, natural antioxidant ingestion reduces the risks of cardiovascular disorders, cancer, diabetes and age related diseases. The nature of drugs can be predicted by the preliminary phytochemical screening. It also helps to detect different constituents present in different polarity solvent. The evaluation of medicinal plants on a large scale for different biological activities is the first essential step to isolate and characterize the active principles which will lead to drug development. [2-3] Thus, the present study helped in identifying phytoconstituents present in the drugs and its fractions which are responsible for various biological activities.

EXPERIMENTAL WORK

Synthesis of flavonoid compounds

Flavones can be created by the process of oxidative cyclisation under a variety of circumstances, including the traditional technique in a solvent-free environment.



Baker-Venkatarman reactions

QUANTIFICATION PHYTOCONSTITUENTS

Preparation of extractive sample

50g of air dried fine powder of *Curcuma aromatica* were infused in methanol (100ml), up to whole exhaustion. The mixture was filtered with muslin cloth and stored at 4°C temperature for further use.

Quantitative Estimation of Flavonoids

Total Flavonoid content of extract was conceded out by aluminium chloride colorimetric assay. To conquer a concentration of 10 mg/ml, the extract sample was thinned in 80% methanol. Methanol was used to dilute extract (25-1000µg/ml) in order to create the calibration curve. 400 µL of a 10% (w/v) potassium chloride solution and 40 µL of a 1M potassium acetate solution were mixed with 200µL of extract that had been diluted with 600µl of methanol. Solution was kept undisturbed for about 30 minutes. Absorbance at 415 nm was detected using spectrophotometer. The flavonoid concentration was calculated. [4-5]

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DPPH Radical Scavenging Activity

To assess DPPH scavenging activity, a spectrophotometric technique was engaged. 100 ml of methanol were mixed with 5 mg of DPPH (200 µM). With 1.9 ml of DPPH solution, 0.1 ml of test solution was dissolved in ethanol at a variety of concentrations. Reaction was kept in the dark for 20 minutes. After twenty minutes, the test combinations absorbance dropped to 517 nm. Vitamin C was the standard medication. [6]

Percentage of inhibition was determined.

Percentage Inhibition = $\frac{\text{OD of Control} - \text{OD of Test}}{\text{OD of Control}} \times 100$

RESULTS AND DISCUSSION

Quantitative Estimation of Flavonoids

Total Flavonoid content of extract was carried out by aluminium chloride colorimetric assay. Absorbance at 415 nm was detected using spectrophotometer. Following tabulation of the data, the flavonoid concentration was calculated and reported in fig 1

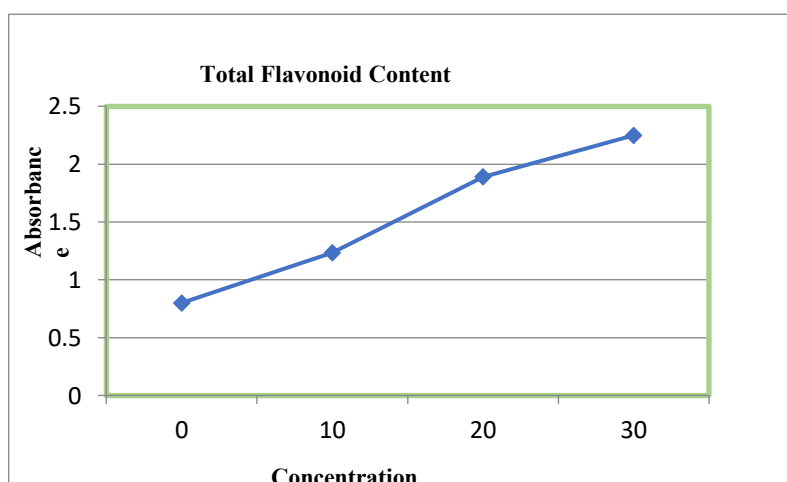


Fig 1 Quantitative Estimation of Secondary Metabolites

Determination of DPPH Radical Scavenging Activity

The antioxidant activity of each sample was assessed by comparing the absorbance of the test solution with that of the control. A decrease in

absorbance indicates the neutralization of DPPH radicals by antioxidants present in the sample. The greater the reduction in absorbance, the higher the antioxidant potential of the drug. The findings were reported in fig 2

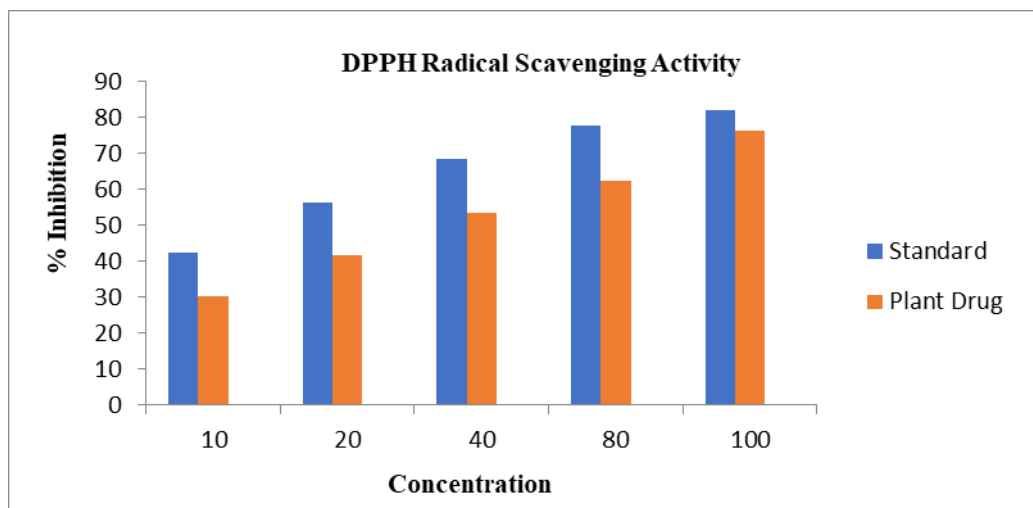


Fig 2 % inhibition of DPPH Radical Scavenging Activity

CONCLUSION

Flavonoids are polyphenolic compounds that are ever-present in natural history. More than 4,000 flavonoids have been recognized, many of which occur in vegetables, fruits and beverages like tea, coffee and fruit drinks. The flavonoids emerge to have played a major role in successful medical treatments of antique times, and their use has persisted up to now. The presence of noteworthy levels of secondary metabolites, particularly flavonoids and provides strong evidence for the plant's multifaceted pharmacological potential.

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