
Research Article

TOTAL PHENOLIC CONTENT ESTIMATION OF *MURRAYA KOENIGII* BY COLORIMETRY

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ABSTRACT

Objective:- *Murraya koenigii* commonly known as curry patta is used in the ancient medicine for curing different ailments. The aim of the present work is to estimate total phenolic content found in the leaves of *Murraya koenigii*.

Method:- Total phenolic content of *Murraya koenigii* was assessed by Folin-Ciocalteu reagent by using gallic acid as calibration standard.

Result:- The total phenolic content was measured by Folin-Ciocalteu was found to be 5.32.

Conclusion:- From the findings it may be concluded that this drug may find use in diabetes and liver related problems.

Keywords: *Murraya koenigii*, Phenolic content, UV-Visible Spectrophotometer.

INTRODUCTION

Murraya koenigii, also known as curry patta in hindi, is belonging to family Rutaceae¹. This is the most common herb used in ancient times. *Murraya koenigii* is found in Himalaya, Sikkim, Kerala, Tamil Nadu, Andhra Pradesh, Maharashtra and Assam². Leaves of *Murraya koenigii* was used for the flavouring purpose. Traditionally, the leaves are used as a herb in ayurvedic medicine. Leaves of the plant have much value as an antidiabetic, antioxidant, antimicrobial, anti-inflammatory, hepatoprotective and anti-cholestermic. Curry leaves are known to be beneficial for healthy hair and hair growth. Ethanolic extract of the leaves are reported to have antipyretic, anticholinesterase, antifungal, antiasthmatic and antidiabetic activity³. Aqueous extract of the leaves are

reported to have antibacterial and nephroprotective action. Aqueous and methanolic extracts of fruits and leaves show antidiabetic activity⁴. The present study was done to estimate total phenolic content found in the methanolic extract of the leaves of *Murraya koenigii*.

Materials And Methods

Plant material

Leaves of *Murraya koenigii* was collected from the medicinal plant garden, Banasthali university in February, 2012 and shade dried.

*Preparation of extracts*⁵

Powdered dried leaves was extracted with 90% methanol by soxhlation and methanol so obtained was freed from solvent by using Rota-vapour to yield extract of brown colour.

Chemicals

Gallic acid, Folin-ciocalteu reagent was obtained from Merck chemicals. All the chemicals used were of analytical grade.

Total Phenolic content by gallic acid⁶

A stock solution of 1mg/ml of gallic acid was prepared with water. From the above stock solution 100mg/ml of gallic acid was prepared. Different concentrations ranging from 1-10mg/ml was prepared. In each standard flask 1.5 ml FC reagent was added and kept it for 5 mins and 4ml of 20% sodium carbonate solution was added and made upto 10ml with distilled water. The mixture was kept for 30 mins and noted at 738 nm. The data was given in figure-2



Fig. 1 Leaves of *Murraya koenigii*

1.5 Sample Preparation and estimation

Murraya koenigii - 0.56g of methanolic extract was taken in 100ml volumetric flask and made it upto 100ml distilled water. From the above solution, 0.1 ml was taken in 10 ml standard flask and 1.5 ml FC reagent and 4ml of 20% sodium carbonate reagent was added to it and made it upto 10 ml with distilled water and kept it for 30 mins. Then absorbance was recorded at 738 nm.

1.6 Calculation:-

Total phenolic contents (%)

$$= \text{GAE} \times V \times D \times 10^{-6} \times 100/W$$

Where:

GAE	-	Gallic acid equivalent (µg/ml)
V	-	Total volume of sample (ml)
D	-	Dilution factor
W	-	Sample weight (g)

Results and discussions

From the preliminary phytochemical screening, it was observed that methanolic extract show presence of carbohydrates, flavonoids, alkaloids, proteins, steroids, saponins and glycosides. The phenolic content by gallic acid was found to be 5.32.

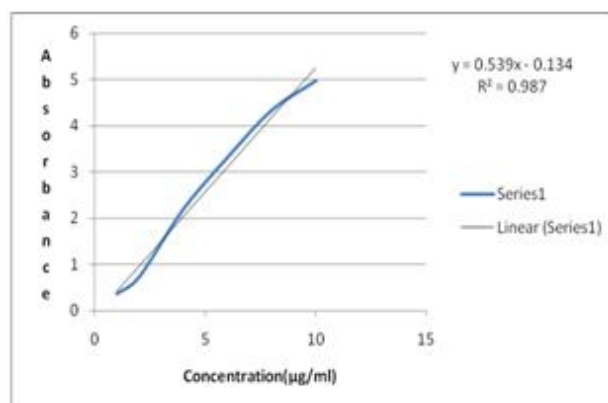


Fig .2 Calibration curve for gallic acid

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REFERENCES

1. Arulselvan P, Senthilkumar GP, Sathish Kumar D, Subramanian S.(2006) Pharmazie 61: 874-7.
2. The Wealth of India, A Dictionary of Indian Raw Materials and Industrial Products,CSIR, New Delhi,Vol.4, 2003.
3. Parmar S, Gangwal A, Sheth N. (2011) Evaluation of antiasthmatic activity of a polyherbal formulation containing four plant extracts, Journal of Chinese Integrative Medicine 9: 373-383.
4. Vinuthan M.K, Girish Kumar V, Ravindra J.P, Jayaprakash, Narayana K. (2004) Effect of extracts of *Murraya koenigii* leaves on the levels of blood glucose and plasma insulin in alloxan-induced diabetic rats. Indian J Physiol Pharmacol 48 (3) : 348-352.
5. Quality control methods for medicinal plant materials, (1998). World Health Organization (WHO), Geneva. 28-37.

6. Siddiqua A., Premakumari K.B., Sultana R.(2010) Antioxidant activity and estimation of total phenol content of *Muntingia calabura* by colorimetry. Chemtech (2) 1: 205-208.