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Asian Journal of Plant Science and Research, 2013, 3(4):31-33

ISSN : 2249-7412
CODEN (USA): AJPSKY

Estimation of flavonoids and preliminary phytochemical screening of *Cinnamomum sulphuratum*

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ABSTRACT

The current study aims for the phytochemical and biochemical screening of the bark of Cinnamomum sulphuratum.Phytochemical screening were carried out using specific chemical tests and the biochemical assay were carried out using the aluminium chloride method the scientific investigation reveals the biological potency of the bark and further in-vitro and in-vivo studies were initiated.

Keywords: *Cinnamomum sulphuratum*,Lauraceae, Flavanoids, Quercetin

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INTRODUCTION

Spices have been used for years in daily life to treat disease all over the world. The genus Cinnamomum, belonging to the family Lauraceae, are trees found in continental Asia, East and Southeast Asia, Australia, the Pacific, and a few speciesin Central and South America[1]. The bark and the leaves of Cinnamomum species (Family Lauraceae) are commonly used as spices in home kitchens and their distilled essential oils or synthetic analogs are used as flavoring agent in the food and beverage industry [2]. *Cinnamomum sulphuratum* Nees, an evergreen tree up to 8.5m tall is distributed mainly in the Southern Western Chats of South India. Phytochemical screening of barks and leaves have been reported by several authors,like isolation and identification of a linalool-type [3] citral and cinnamaldehyde[4]methyl cinnamate-type [5] and cinnamaldehyde-type[6].in the present study, phytochemical and biochemical screening of extracts of the bark of this plant was evaluated.

MATERIALS AND METHODS

COLLECTION AND AUTHENTIFICATION OF SAMPLE

The samples were collected from natural resources from the Malappuram District and authenticated from the Taxonomy Department ofUwin Life Science, Malappuram. The sample specimen was stored in Uwin Life Science, Malappuram. The collected specimen was then coarsely powdered[7].

EXTRACTION

The dried and powdered samples were extracted separately by using Ethyl Acetate. The extracts were then concentrated to dryness and dissolved in respective solvents and the concentration was made up to 100mg/ml.[8]

PRELIMINARY PHYTOCHEMICAL SCREENING

1. Test for Alkaloids

a) Dragendroff'stest

8g of Bi(NO3)3.5H2O was dissolved in 20 ml of HNO3 and 2.72g of KI in 400ml of water. These were mixed and allow to stand when KNO3 crystals out. The supernatant was decanted off and made up to 100ml with distilled water. The alkaloids were regenerated from the precipitate by treating with sodium carbonate followed by extraction of the liberated base with ether. To 50ml of alcoholic solution of extract was added to 2ml of HCl. To this acidic medium 1ml of reagent was added. An orange red precipitate produces immediately indicates the presence of alkaloids.

b)Wagner's test (Iodine-Potassium iodide solution)

1.2 gm of Iodine and 2gm of H2SO4 and the solution was diluted to 100ml. 10ml of alcoholic extract was acidified by adding 1.5% v/v of HCl and a few drops of Wagner's reagent. Formation of yellow or brown precipitate confirmed the presence of alkaloids.

2. Test for Glycosides

A small amount of alcoholic extract was dissolved in 1ml of water and the aqueous NaOH solution was dissolved in 1ml of water and the aqueous NaOH solution was added. Formation of yellow color indicates the presence of glycosides.

4. Test for Flavanoids

In a test tube containing 0.5ml of alcoholic extract, 5-10 drops of dilute HCl and small piece of ZnCl or magnesium were added and the solution was boiled for a few minutes. In the presence of flavanoids, reddish pink or dirty brown color was produced.

6.Test for Steroid

Salkowski test

To 2ml of chloroform extract, 1ml of concentrated sulphuric acid was added carefully along the sides of the test tubes. A red color was produced in the chloroform layer in the presence of steroids[9].

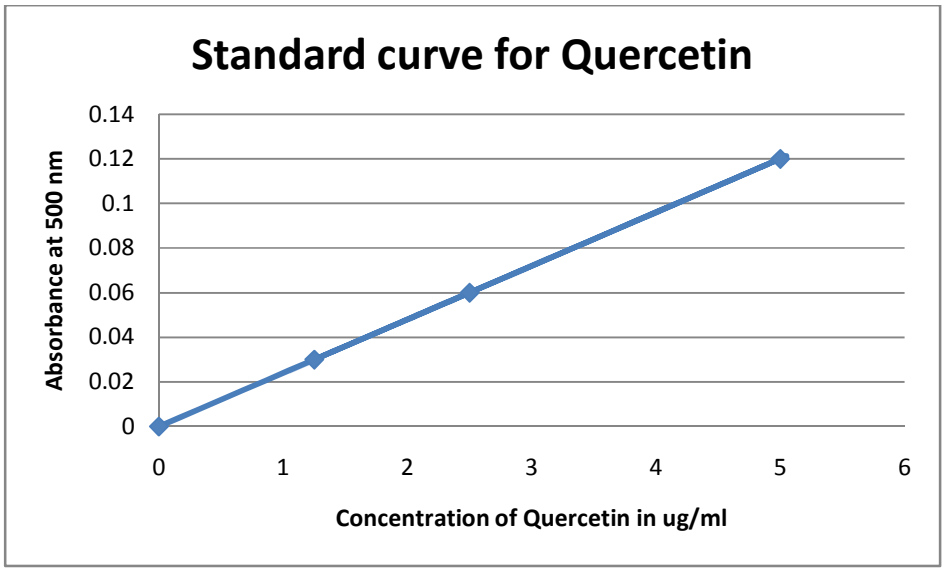
Estimation of Flavanoids

The total Flavonoids was estimated by the Aluminium chloride method. The calibration curve was obtained for standard quercetin in the concentrations 0.2 to 1ug/ml is presented in the standard graph .The quantity of the flavonoids present in the extracts of the samples were calculated as % mg Eq. of Quercetin.

RESULTS

TESTS	RESULTS
Alkaloids	+
Flavanoids	+
Glycosides	_
Steroids	_
Carbohydrates	_

Calibration curve of Flavonoids



The quantity of Flavonoids present in the sample is 1.2 % mg Equalance of Quercetin

CONCLUSION

The total flavonoid content in the *C.sulphuratum* was determined using Aluminium chloride method. The present work revealed the importance of the wild variety of Cinnomomum. The preliminary screening revealed the presence of class of compounds present in the plant. From the work we conclude that the wild variety is highly potential in term of biological activity.

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