

# PHYTOCHEMICAL SCREENING OF WHOLE PLANT EXTRACT OF *Momordica dioica*(Roxb.)

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**ABSTRACT:** *Momordica dioica* Roxb. (Cucurbitaceae), has been commonly used as a medicinal vegetable for cooking purpose. It is traditionally used diabetes, blood pressure, fever, migraine, liver disorders, intestinal worm infestation, stomach disorder etc. Secondary metabolites are belong to such classes compound which are known to show curative activity against several ailments in man and human and therefore could explain the use of traditional medicinal plant for the treatment of illness. The present study was undertaken to explore the phytochemical constituents of whole plant extract of *Momordica dioica* roxb. Preliminary phytochemical analysis revealed the presence of secondary metabolites such as saponins, terpenoids, alkaloids, tannins, flavonoids in ethanolic extract and aqueous extract and absence of phytosterols in both aqueous ethanolic extract.

**Key word:** Phytochemical, Secondary metabolite, *Momordica dioica* etc.

## I. Introduction –

Cucurbitaceae family is commonly known as the gourd family, melon or pumpkin family. This family is composed of 118 genera and 825 species, which are widely distributed in the warmer region of the world. The major contribution for economically important domesticated species is cultivated for medicinal and nutritional value (Habib- ur- Rehman 2003). Phytochemicals are naturally occurring biochemicals that give plants their colour, flavor, smell and texture. In addition, plants developed this biochemical means of protection from highly reactive molecules of oxygen and a number of environmental hazards such as virus, bacteria and fungi that could affect their chance for survival (Barries 1996). *M. dioica* roxb is a medicinal and economically important plant; it is a seasonal plant with a tuberous root. It is cultivated for its edible fruits used as a vegetable. Alkaloids are the major component found in the plant (sadyojatha A.M 1996). The medicinal values of plants lie in some chemical substances known as phytochemicals that produce definite physiological actions on the human body. Knowledge of the chemical constituents of the plant is desirable not only for the discovery of therapeutic agents but also such information may be of value as precursors for the synthesis of complex chemical substances (Edego H.O 2005).

## II. Material and Methods –

### **2.1 Collection of plant material**

Sample of whole plant (stem, leaf, seed, and fruits) will be collected from Barwani district, western Nimar (M.P)

### **2.2 Processing of plant material**

The stem, leaves, seeds and fruits of *M. dioica* will be washed in running water and cut into small bits to facilitate drying and grinding according to standard procedure. The powdered sample was wrapped in paper and packed in a polythene bag to avoid moisture and contamination.

### **2.3 Solvent extraction**

The extraction of *Momordica dioica* was carried out by Soxhlet extraction method (Harborne 1984). Dried powder was subjected to Soxhlet extraction unit and ethanol used as solvent. Soxhlet extraction process was allowed to carry out for 12 cycles with the maintenance of 78°C for ethanolic solvent respectively. The solvent extract was concentrated in a water bath at 40°C using a beaker and preserved in air-tight bottles at 5°C for further experimentation. The extract was diluted and then used for the test.

## **III. Phytochemical screening –**

Solvent extract obtained from whole plant extract of plant material was being analyzed for detection of phytochemical compounds. Following phytochemical analysis tests were based on the visual observation of colour modification or precipitate formation after the addition of specific reagents. (Harborne, 1973 and Krishnaiah et al, 2009).

Detection of alkaloids.

Detection of tannins.

Detection of flavonoids.

Detection of saponins.

Detection of glycosides.

Detection of terpenoids.

Detection of phytosterols.

### 3.1 Test of phytochemical\_–

A small portion of the aqueous and ethanolic extracts was subjected to the phytochemical test using methods to test for alkaloids, terpenoids, saponins, flavonoids, terpenoid phenols, glycosides and phytosterol were performed following the method described by Harborne, 1973 and Krishnaiah et.al, 2009

#### 3.2 Test for alkaloids –

About 0.2 g extract warmed with 2% H<sub>2</sub>SO<sub>4</sub> for two minutes, filtered and few drop of dragendoffs reagent added, orange red precipitate indicates the presence of alkaloid.

#### 3.3 Test for tanins –

Small quantity of extracts mixed with water, heated, filtered and ferric chloride added a dark green solution indicate the presence of tannins.

#### 3.4 Test for terpenoids –

About 0.2 g extract was mixed with 2ml chloroform and concentrate H<sub>2</sub>SO<sub>4</sub> was carefully added to form a layer .A reddish brown coloration of the interface formed indicating the presence of terpenoids.

#### 3.5 Test for saponins –

About 0.2g of the extract shaken with 5 ml of distilled water and then heated to boil appearance of creamy mix of bubbles shows the presence of saponins

#### 3.6 Test for flavonoids –

Extract of about 0.2 g dissolved in dilute NaoH and Hcl added. A yellow solution that turns colorless indicates the presence of flavonoids.

#### 3.7 Test for glycosides –

The extracts hydrolyzed with Hcl solution and neutralized with NaoH solution. A few drops of Fehling solution A and B were added Red precipitate indicate the presence of glycosides.

#### 3.8 Test for phytosterols –

Sterols were detected by the reaction of Liebermann. Crude extract was dissolved in 0.5 ml chloroform. Treated with Liebermann Burchardt. A ring of blue green, showed a positive reaction

#### .iv. Result and Discussion –

The phytochemical screening of the extract showed that plant contain terpenoid , saponin ,alkaloid ,tannin, Flavonoids, and phenols and absence of phytosterols etc. preliminary phytochemical screening is an important step in the chemical and pharmacological study of a medicinal plant. It may be suggest possible pharmacological group, highlighting a close relationship with its main therapeutic uses.

#### v.Data table –

Qualitative analysis o phytochemicals in ethanol and aqueous extracts of *M. dioica* whole plant extract.

(+) Indicates presence (-) Indicates absence

S.NO	Phytochemical	Ethanol	Aqueous
1	Alkaloid	+	+
2	Flavonoids	+	+
3	Phenols	+	+
4	Glycoside	-	+
5	Tanins	+	+
6	Saponins	+	+(low)
7	Phytosterols	-	-
6	Terpenoids	+	+

#### vi. Conclusion –

In the present study, evaluation of phytochemicals studies of *M. dioica* whole plant extract provides valuable information regarding their chemical constituents. This may be useful for the standardization and isolation of bioactive compounds from this plant. The constituents of *M. dioica* whole plant extracts may have several properties that leading to opening up new avenues in the use of natural products for therapeutic purpose.

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#### viii. Referance

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