

**QUALITATIVE PHYTOCHEMICAL ANALYSIS AND ORGANOLEPTIC EVALUATION
OF SIDDHA HERBO MINERAL FORMULATION MURUVILI KUDINEER**Abisha A.*¹, Shanmugapriya C.², Meenakumari R.³ and Muralidharan P.⁴¹Department of PG Kuzhanthai Maruthuvam, Govt Siddha Medical College, Chennai-106.²Lecturer, Department of PG Kuzhanthai Maruthuvam, Govt Siddha Medical College, Chennai-106.³Head of the Department, Department of PG Kuzhanthai Maruthuvam, Govt Siddha Medical College, Chennai-106.⁴Prof and Hod of C.L., Baid Metha College of Pharmacy, Thoraipakkam, Chennai-97.***Corresponding Author: Abisha A.**

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ABSTRACT

Muruvili Kudineer is a traditional siddha formula that contains the fifteen different herbs and one mineral. *Muruvili Kudineer* is rich in anti bacterial, anti viral and anti inflammatory and anti pyretic properties. *Muruvili Kudineer* is also known to cure Fever and effective in the treatment of Bronchitis. The *Muruvili Kudineer* extracts have been screened for phytochemical constituents in five different solvents as water, acetone, chloroform, methanol and ethanol. Preliminary phytochemical analysis revealed the presence of Eleven compounds such as carbohydrates, tannins, steroids, terpenoids, alkaloids, flavanoids, glycosides, saponins, proteins, phenols, gum and mucilage. Phytochemical analysis of the samples were more positive for Hydro-alcoholic extract. Organoleptic evaluation contains colour, smell, touch and appearance. The results suggest that *Muruvili Kudineer* are a rich source of valuable primary and secondary metabolites which make "*Muruvili Kudineer*" one of the most valuable herbo mineral formulation.

KEY WORDS: Phytochemical, *Muruvili Kudineer*, Organoleptic.**INTRODUCTION**

Siddha System of Medicine also known as Siddha Vaidyam in India, is the oldest among the Indian Medical Systems. It is about 10,000 years old. The word 'Siddha' comes from 'Siddhi' which means an object to be attained or perfection of heavenly bliss. Siddha can be termed as a scientific art, which was founded by siddhars or evolved souls (numbering 18) who lived in the past. Of these 18 Siddhars, Agasthiyar is considered the foremost and his work is considered as outstanding in Siddha Medicine. More than just a medical system, Siddha is a method dealing with intense spirituality and immense possibility for the betterment of human beings. In short, Siddha medicine means 'Medicine that is eternally perfect'.

The formulation was evaluated, Fresh formulation prepared in the laboratory was tested for the presence of above mentioned parametetr.

DRUGS AUTHENTICATION AND PREPARATION

Muruvili Kudineer is a herbomineral formulation comprising of fifteen type of herbs and one type of mineral,

Table 1: Muruvili Kudineer Formulation.

S.No	Tamil Name	Botanical Name
1	Muruvili	<i>Cuscuta reflexa</i>
2	Vengayam	<i>Allium cepa</i>
3	Vellai ver	Root of <i>Gynandropis pentaphylla</i>
4	Keezhanelli ver	Root of <i>Phyllanthus amarus</i>
5	Nannari ver	Root of <i>Hemidesmus indicus</i>
6	Vishnukaranthai	<i>Evolvus alsinoids</i>
7	Nelli vatral	<i>Phyllanthus emblica</i>
8	Kadukkai	<i>Terminalia chebula</i>
9	Narathai ver	Root of <i>Citrus medica</i>
10	Nilaposani ver	Root of <i>Ipomoea mauritiana</i>
11	Parsorti	<i>Ruellia secunda</i>
12	Vasambu	<i>Acorus calamus</i>
13	Kuratai ver	<i>Trichosanthes tricuspidata</i>
14	Ellumichai ver	Root of <i>Citrus lemon</i>
15	Malaithangi ver	Root of <i>Sida acuta</i>
16	Indhuppu	<i>Sodium chloridum impure</i>

The drugs were identified and authenticated by Medicinal botany department in Government Siddha Medical College, Arumbakkam, Chennai-106. The purified raw drugs are made into coarse powder, then the coarse powder is taken in a mud pot, 60ml of water is

added and heated, till it is reduced into 30ml.

Extraction Of Specimen

The Hydro-alcoholic extract of drug was subjected to preliminary phytochemical screening for the presence or absence of phyto constituents.

Qualitative Analysis Of Phytochemicals

The prepared test extracts were analyzed for the presence of alkaloids, glycosides, saponins, fixed oils, phytosterols, phenols, flavonoids, gum, mucilages etc. The presence of phytochemicals extracted in different solvents was confirmed by standard protocols.

1. TEST FOR ALKALOIDS

The extract was treated with dilute hydrochloric acid and filtered. The filtrate is used in the following tests,

a) Mayer's reagent (Potassium Mercuric Iodine Solution)

0.5ml of the extract was treated with Mayer's reagent and the appearance of cream color indicates the presence of alkaloid.

2. TEST FOR CARBOHYDRATES

a) Molisch's test

The extract was treated with 3ml of alpha-naphthol in alcohol and concentrated sulphuric acid was added along the sides of the test tube carefully. Formation of violet color ring at the junction of two liquids indicates the presence of carbohydrates.

3. TEST FOR STEROIDS

a) Libermann Burchard test

The extract was treated with small quantity of concentrated sulphuric acid, glacial acetic acid and acetic anhydride. The appearance of green color indicates the presence of steroids.

4. TEST FOR PROTEINS

a) Biuret's test

The extract was treated with copper sulphate and sodium hydroxide solution.

The appearance of violet color indicates the presence of proteins.

5. TEST for TANNIN'S

The extract was treated with 10% lead acetate solution. The appearance of white precipitate indicates the presence of tannins.

6. TEST FOR PHENOLS

The extract was treated with neutral ferric chloride solution. The appearance of violet indicates color indicates the presence of phenols.

7. TEST FOR FLAVONOID'S

5ml of extract solution was hydrolysed with 10%v/v sulphuric acid and cooled. Then, it is extracted with diethyl ether and divided into three portions in three

separate test tubes. 1ml of diluted sodium carbonate, 1ml of 0.1N sodium hydroxide, and 1ml of strong ammonia solution were added to the first, second and third test tubes.

8. TEST FOR GUMS AND MUCILAGE

The extract was treated with 25ml of absolute alcohol and then solution was filtered. The filtrate was examined for its swelling properties. Appearance of a cloudy precipitate indicates the presence of gum and mucilage.

9. TEST FOR GLYCOSIDES

The extract was dissolved in the glacial acetic acid and few drops of ferric chloride solution was added, followed by the addition of concentrated sulphuric acid, formation of red ring at the junction of two liquids indicates the presence of glycosides.

10. TEST FOR SAPONINS

1ml of the extract was diluted to 20ml with distilled water and shaken well in a test tube.

The formation of foam in the upper part of the test tube indicates the presence of saponins.

11. TEST FOR TERPENES

The extract was treated with tin and thionyl chloride, appearance of pink color indicates the presence of terpenes.

Table 2: Showing Phytochemical screening of Muruvili Kudineer extracts Tests

S.no	Phyto-components	Results
1	Alkaloid	+
2	Carbohydrate	-
3	Glycoside	+
4	Saponins	+
5	Terpenes	+
6	Phenols	+
7	Flavonoids	+
8	Sterols	+
9	Proteins	+
10	Tannin	+
11	Gum and Mucilage	+

+ = Present; - = Absent

ORGANOLEPTIC EVALUATION

Preparation of standard solution:

0.2g of ferric ammonium sulphate was dissolved in distilled water containing 10ml of concentrated hydrochloric acid and the volume was made up to 250ml with distilled water. From this stock solution 1, 2, 3, 4 & 5ml was pipette out into 5 different 50ml volumetric flask and 5ml of 10% aq. hydroxyl ammonium chloride solution was added and the pH was adjusted between 3 to 5 using 2M sodium acetate buffer solution and 4ml of 1, 10-phenanthroline was added and finally the volume was made up to 50ml with distilled water. After 15-20 min. the absorbance was noted at 515nm. The standard curve of concentration Vs absorbance was plotted.

Preparation of Test Solution

0.21g of test sample was taken with 50ml of 6N hydrochloric acid and boiled for 2-3 min. Then it was filtered and the volume was made up to 250ml with distilled water. From this 5ml of solution was pipette out into 50ml volumetric flask and the same procedure was followed as in the preparation of standard solution. After 15-20 min. the absorbance was noted at 515nm. From the absorbance the corresponding concentration was determined by extrapolation of calibration curve.

Table 3: Organoleptic evaluation.

Parameter	Observation
Color	Brownish color
Smell	Characteristic Odour
Touch	Water
Appearance	Watery

RESULT

Phytochemical screening and organoleptic evaluation

Phytochemicals have been found to possess a wide range of activities. The *Muruvili Kudineer* extract have been screened for phytochemical constituents in five different solvents such as water, acetone, chloroform, methanol and ethanol. Preliminary phytochemical analysis revealed the presence of total 11 compounds such as carbohydrates, tannins, steroids, terpenoids, alkaloids, flavanoids, glycosides, saponins, proteins, phenols, gum and mucilage (Table 2). Phytochemical studies of all the five different extracts conclude that hydro alcoholic extracts of test samples had more positive results for tannins, steroids, glycosides, coumarins, flavonoids, proteins, alkaloids and phenolic compounds. Primarily phenolic compounds are of great importance as cellular support material because polymeric phenols form the integral part of the cell wall structure. Bioactive polyphenols have attracted special attention because they can protect the human body from the oxidative stress which may lead to many diseases including cancer, cardiovascular problems and ageing. Traditionally saponins have been extensively used as detergents, pesticides as well as mollucicides, in addition to their industrial application such as foaming, surface active agents etc. and also found to have beneficial health effects. The role of tannins is to protect from predation, pesticides and also in plant growth regulation. Previous studies by various other workers prove that flavanoids provide health benefits through cell signaling pathways. Organoleptic evaluation is best parameters (Table 3) of *Muruvili Kudineer*.

CONCLUSION

Medicinal plants were the potent source of human health due to the presence of active phytochemical components that are responsible for its various pharmacological activities. On the basis of the results obtained, the present work conclude that the test extracts of *Muruvili Kudineer* are rich in phytochemical constituents even though the

screening of the samples had shown variation in their phytochemical constituents with the presence and or absence of some components. The study reveals that the results of extraction yield, total phenol and flavanoid compounds and bioactivity tests varied depending upon the type of solvent being used. Most components were present in acetone and ethanol extracts. The presence of various secondary metabolites such as glycosides, phytosterols, alkaloids, saponins, phenols and flavanoids were believed to exhibit the antibiotic properties of *Muruvili Kudineer* and confirmed their antimicrobial efficacy against selected pathogens. The test samples were found to be suitable in the elucidation of bioactive components which could be used effectively in the treatment of several ailments. It would not be surprising therefore to use the plant samples to cure certain types of illness in humans and animals. This obtained information will be helpful as a primary platform for further phytochemical analysis.

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