



**ORIGINAL RESEARCH PAPER**

**Siddha**

**BIOCHEMICAL ANALYSIS OF VARMAM POLYHERBAL FORMULATION DRUG OF KURUNTHOTTI KASHAYAM**

**KEY WORDS:** Siddha medicine, Varma maruthuvam, Kurunthotti kashayam, Biochemical analysis

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**ABSTRACT**

The Siddha system of medicine is an ancient system and it is mainly practiced in South India. This system of medicine includes various special therapies like *Varmam* therapy, Siddhar Yogam and *Kayakarpam* (Rejuvenation). *Varmam* therapy is a specialized unique branch of the Siddha system. *Varma maruthuvam* contains various internal medicine and external techniques/medicine to treat diseases. *Kurunthotti kashayam* is one of the non-shashtric preparations of *Varmam* formulation, described in the *Varmam* literature named as *Varma marunthu seimurigaal*<sup>1</sup>. It contains 17 ingredients which are all herbal only and is indicated for all types of *Varmam*. The objective of the study is to evaluate the compounds present in the drug *Kurunthotti kashayam*. The biochemical analysis of *Kurunthotti kashayam* reveals the presence of carbonates, sulfates, Phosphates and nitrates which revealed the enhancement of therapeutic action.

**1. INTRODUCTION:**

The Siddha system of medicine is an ancient system and it is mainly practiced in South India. This system of medicine includes various special therapies like *Varmam* therapy, Siddhar Yogam and *Kayakarpam* (Rejuvenation). *Varmam* therapy is a specialized unique branch of the Siddha system. *Varmam maruthuvam* contains various internal medicine and external techniques/medicine to treat diseases<sup>(1)</sup>. Siddha medicine contains herbal, metals and minerals in their medicinal preparations. *Kashayam* is one of the 32 types of internal medicine which is the most common and frequently used medicine in *Varmam* therapy. *Kurunthotti kashayam* is one of the non-shashtric preparations of *Varmam* formulation, described in the *Varmam* literature named as *Varma marunthu seimurigaal*<sup>(2)</sup>. It contains 17 ingredients which are all herbal only and is indicated for all types of *Varmam*.

Herbal medicine contains various biochemical compounds used to treat various diseases. Nowadays, the need for siddha medicine is increasing. So, it is essential to standardize the medicine to assess the safety and quality of the drug. Through this study, biochemical analysis of *Kurunthotti kashayam* may be carried out which may give valuable information for further clinical studies.

**2. MATERIALS AND METHOD:**

*Kurunthotti Kashayam* is a polyherbal formulation that contains 17 ingredients mentioned in *Varma Marunthu Seimuraigal*<sup>(2)</sup>.

**A. Source And Purification of Raw Drugs:**

The required raw drugs for the preparation of *Kurunthotti kashayam* were purchased from a well-reputed country raw drug shop and drugs were authenticated by the competent authority Medicinal Botany. After that, the raw drugs were purified separately as per literacy evidence<sup>(5,6)</sup> and the Medicine was prepared in Gunapadam laboratory - National Institute of Siddha.

**B. Ingredients:**

**Table no: 1**

RAW DRUGS	BOTANICAL NAME <sup>(3,4)</sup>	USED PARTS	WEIGHT IN GRAMS
<i>Kurunthotti Ver</i>	<i>(Pavonia zeylanica)</i>	Root	17.5 Grams
<i>Vilva Ver</i>	<i>(Aegle marmelos)</i>	Root	17.5 Grams
<i>Muthakassu</i>	<i>(Cyperus rotundus)</i>	Root	17.5 Grams

<i>Seenthil</i>	<i>(Tinospora cordifolia)</i>	Root	17.5 Grams
<i>Arugan Ver</i>	<i>(Cynodon dactylon)</i>	Root	17.5 Grams
<i>Murungai Ver</i>	<i>(Moringo oleifera)</i>	Root	17.5 Grams
<i>Kalyana murungaipattai</i>	<i>(Erythrina variegata)</i>	Bark	17.5 Grams
<i>Sirukanjori Ver</i>	<i>(Tragia involucrata)</i>	Root	17.5 Grams
<i>AamanakuVer</i>	<i>(Ricinus communis)</i>	Root	17.5 Grams
<i>Chukku</i>	<i>(Zingiber officinale)</i>	Rhizome	10.2 Grams
<i>Milagu</i>	<i>(Piper nigrum)</i>	Seed	10.2 Grams
<i>Thippili</i>	<i>(Piper longum)</i>	Dry fruit	10.2 Grams
<i>Athimathuram</i>	<i>(Glycyrrhiza glabra)</i>	Root	10.2 Grams
<i>Oomam</i>	<i>(Trachyspermum ammi)</i>	Seed	10.2 Grams
<i>Kothamalli</i>	<i>(Coriandrum sativum)</i>	Seed	10.2 Grams
<i>Kiramppu</i>	<i>(Syzygium aromaticum)</i>	Bud	10.2 Grams
<i>Sittarathai</i>	<i>(Alpinia galanga)</i>	Tuber	10.2 Grams

**C. Methodology:**

5gms of the drug was weighed accurately and placed in a 250ml clean beaker then 50ml of distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 100ml volumetric flask and then it is made to 100ml with distilled water. This fluid is taken for analysis.

**D. Biochemical Analysis**

The biochemical analysis of *Kurunthotti kashayam* was done at the Noble research solution, Perambur, Chennai.

**Analytical Investigation on Test for Acid Radicals**

**Table no: 2**

S.No	Test for Specific Acid Radical	Observation	Results
1.	Test for Carbonates To 1 ml of the test solution about 1 ml of concentration (conc.) HCl was added.	Formation of brisk effervescence	Indicates the presence of Carbonates

2.	Test for chlorides To 2 ml of test solution, about 1 ml of silver nitrate solution was added.	No White precipitate is formed.	Indicates the absence of Chlorides
3.	Test for sulfates To 1 ml of the test sample add diluted H <sub>2</sub> SO <sub>4</sub> till effervescence ceases followed by this about 1 ml of barium chloride solution was added.	A white precipitate is formed	Indicates the presence of Sulfates
4.	Test for sulfides To 1 ml of the test sample, about 2 ml of HCl was added with a slight warming of the mixture.	No colorless gas with the smell of rotten egg is formed.	Indicates the absence of Sulfides
5.	Test for phosphates To 2 ml of test solution treated with 2 ml of ammonium molybdate solution followed by addition of 2ml of concentrated nitric acid	A yellow precipitate is obtained.	Indicates the Presence of Phosphates
6.	Test for Fluoride and Oxalate To 2 ml of the test solution about 2 ml of dil acetic acid and 2ml of calcium chloride solution were added	No White precipitate is formed.	Indicates the absence of Fluoride and Oxalate
7.	Test for Borates 2ml of the test solution was added with sulphuric acid and 95% alcohol followed by exposure to flame	No green flame is formed	Indicates the absence of Borates
8.	Test for Nitrates 0.5 ml of test solution heated with copper turning followed by addition of sulphuric acid	Reddish brown gas is obtained	Indicates the presence of Nitrates

**Analytical Investigation on Test for Basic Radicals**

**Table no: 3 -**

S.No	Test for Specific Basic Radical	Observation	Result
1.	Test for Lead 1 ml of the test solution was added with 2 ml of potassium chromate solution.	No yellow precipitate is formed	Indicates the absence of Lead
2.	Test for Arsenic 1 ml of the test solution was added with 2 ml of 10% (2N) sodium hydroxide (NaOH) solution.	No brownish red precipitate is formed	Indicates the absence of Arsenic
3.	Test for Mercury 1 ml of the test solution was added with 2 ml of 10% (2N) sodium hydroxide (NaOH) solution.	No yellow precipitate is obtained	Indicates the absence of Mercury

4.	Test for Copper 1 ml of the test solution added with 1 ml of Ammonium hydroxide (NH <sub>4</sub> OH) solution	No blue precipitate is formed	Indicates the absence of Copper
5.	Test for Ferric To 1 ml of test solution, about 2 ml of potassium ferrocyanide was added.	No blue precipitate is formed	Indicates the absence of Ferric
6.	Test for Ferrous To 1 ml of test solution, about 1 ml of potassium ferric cyanide solution was added.	No blue precipitate is obtained	Indicates the absence of Ferrous
7.	Test for Zinc 1 ml of the test solution added with 2 ml of sodium hydroxide (NaOH) dropwise until indication appears.	No white precipitate is formed	Indicates the absence of Zinc
8.	Test for Silver 1 ml of the test solution was added with 1 ml of conc. HCl followed by the appearance of a curdy white precipitate. Boil the precipitate with water. It does not dissolve. Add NH <sub>4</sub> OH solution to it and add 1 ml dilute HNO <sub>3</sub> .	No curdy white precipitate is formed	Indicates the absence of silver
9.	Test for Magnesium 1 ml of the test solution added with 2 ml of sodium hydroxide (NaOH) dropwise until indication appears.	No white precipitate is obtained	Indicates the absence of Magnesium

**3. RESULT**

This biochemical analysis for the drug *Kurunthotti Kashayam* has been tabulated above in table 2 and 3

The trial drug contains

- Carbonates
- Sulfates
- Phosphates
- Nitrates.

The negative results indicate the absence of lead, arsenic, mercury, copper, ferric, ferrous, zinc, silver, and magnesium.

**4. CONCLUSION:**

The analysis reveals the presence of carbonates, sulfates, phosphates and nitrates. *Kurunthotti kashayam* is a siddha drug taken from the *Varmam* literature. It is used to treat all types of *Varmam*. The drug is screened for its biochemical property. Further, comprehensive standardization is needed to evaluate its potency and the drug has its potency to undergo further research.

**Source Of Funding : Nil**

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