

# Biochemical Analysis of Siddha Herbo Mineral Drug Thasadeepakkini Chooranam

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**Abstract:** Siddha system is the ancient system of medicine presently practiced predominantly in south India. Siddha system of medicine contains herbals, metals and minerals in their medicinal preparation. Chooranams are one of the most common and frequently used siddha forms of medicine. The chooranam is one of the 32 types of Internal medicine in siddha system. The Thasadeepakkini chooranam is an herbomineral combination of nine botanical drugs and one mineral drug cited in text sigicharathina deepam. In this medicine all the drugs are purified and prepared as per the siddha literature and used to treat anemia, indigestion, cough, fever, diarrhoea and ageusia. The objective of the study is to evaluate the compounds present in the herbomineral drug Thasadeepakkini chooranam. The biochemical analysis of the Thasadeepakkini chooranam reveals the presence of calcium, sulphate, chloride, starch, tannic acid, unsaturated compound, reducing sugar, amino acid. These compounds enhance the medicinal properties of the trial drug.

**Keywords:** Siddha medicine, biochemical analysis, herbomineral drug, Thasadeepakkini chooranam.

## 1. Introduction

Siddha system is the foremost of all medicinal system and it is practiced in south India, especially in Tamilnadu. siddha system of medicine is evolved based on Ninety-six tools otherwise called 96 tattuyam, which include physical, physiological, psychological and intellectual aspects of every human being. Siddha system is a holistic science which aims at treatment of various infirmities of the body, mind and soul. In siddha system herbs are used primarily along with minerals and metals. As per siddha texts, the medicine has been divided into 32 types of Internal medicine and 32 types of External medicine.

Thasadeepakkini chooranam is one of the 32 types of Internal medicine. It is an herbomineral combination of nine botanical drugs and one mineral drug cited in siddha text sigicharathina deepam and it is indicated for the treatment of anemia, indigestion, cough, fever, diarrhoea and ageusia. Herbal medicine contains various biochemical compounds that are useful in treating various diseases. Nowadays the need for herbal medicines is increasing daily, so, there is demand to provide the quality of the drug. It is essential to standardize the herbal medicines for assess the safety and quality of the

drug. Through this study, the biochemical analysis of Thasadeepakkini chooranam may carried out which may give valuable information for future clinical studies.

## 2. Materials and Methods

The siddha drug Thasadeepakkini chooranam selected from siddha literature sigicharathina deepam.

### A. Collection, Identification and Authentication of the drug

The required herbo mineral drug were purchased from a well reputed Siddha drug store. The drugs are identified and authenticated by Department of Gunapadam, Government Siddha Medical College, and Hospital, palayamkottai, Tirunelveli.

### B. Methods of purification and preparations

The mentioned drugs are purified and powdered properly as the medicine Thasa deepakkini Chooranam as per literary evidence.

Table 1  
Ingredients of Thasadeepakkini chooranam

S.no.	Drug	Botanical name/Chemical name	Quantity
1	Purified perungaayam	<i>Ferula asafoetida</i>	10gram
2	Purified vasambu	<i>Acorus calamus</i>	20gram
3	Purified vaividangam	<i>Embelia ribes</i>	30 gram
4	Purified Indhuppu	<i>Sodium chloride (Rock salt)</i>	40 gram
5	Purified Omam	<i>Carum copticum</i>	50 gram
6	Purified kadukaai	<i>Terminalia chebula</i>	60 gram
7	Purified Chitramoolam	<i>Plumbago zeylanica</i>	70 gram
8	Purified Koshtam	<i>Costus speciosus</i>	80 gram
9	Purified Thippili	<i>Piper longum</i>	90 gram
10	Purified Seeragam	<i>Cuminum cyminum</i>	100 gram

Table 2  
Qualitative analysis

S.No.	EXPERIMENT	OBSERVATION	INFERENCE
01	<b>TEST FOR CALCIUM</b> 2ml of the above prepared extract is taken in a clean test tube. To this add 2ml of 4% Ammonium oxalate solution	No white precipitate is formed	Indicates the presence of calcium
02	<b>TEST FOR SULPHATE</b> 2ml of the extract is added to 5% Barium chloride solution.	No white precipitate is formed	Indicates the presence of sulphate
03	<b>TEST FOR CHLORIDE</b> The extract is treated with silver nitrate solution	A white precipitate is formed	Indicates the presence of chloride
04	<b>TEST FOR CARBONATE</b> The substance is treated with concentrated HCl.	No brisk effervescence is formed	Absence of carbonate
05	<b>TEST FOR STARCH</b> The extract is added with weak iodine solution	Blue colour is formed	Indicates the presence of starch
06	<b>TEST FOR FERRIC IRON</b> The extract is acidified with Glacial acetic acid and potassium ferro cyanide.	No blue colour is formed	Absence of ferric iron
07	<b>TEST FOR FERROUS IRON</b> The extract is treated with concentrated Nitric acid and Ammonium thiocyanate solution	No blood red colour is formed	Absence of ferrous iron
08	<b>TEST FOR PHOSPHATE</b> The extract is treated with Ammonium Molybdate and concentrated nitric acid	No yellow precipitate is formed	Absence of phosphate
09	<b>TEST FOR ALBUMIN</b> The extract is treated with Esbach's reagent	No yellow precipitate is formed	Absence of Albumin
10	<b>TEST FOR TANNIC ACID</b> The extract is treated with ferric chloride.	Blue black precipitate is formed	Indicates the presence of Tannic acid
11	<b>TEST FOR UNSATURATION</b> Potassium permanganate solution is added to the extract	It gets decolourised	Indicates the presence of unsaturated compound
12	<b>TEST FOR THE REDUCING SUGAR</b> 5ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and add 8-10 drops of the extract and again boil it for 2 minutes.	Colour change occurs	Indicates the presence of Reducing sugar
13	<b>TEST FOR AMINO ACID</b> One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% Ninhydrin is sprayed over the same and dried it well.	Violet colour is formed	Indicates the presence of Amino acid
14	<b>TEST FOR ZINC</b> The extract is treated with Potassium Ferro cyanide.	No white precipitate is formed	Absence of zinc

### C. Biochemical analysis

Screening the herbo mineral drug Thasadeepakkini chooranam to identify the Biochemical properties present in the ingredient.

### D. Chemical and drugs

The chemicals used in this study were of analytical grade obtained from Department of Biochemistry, Government Siddha Medical College and Hospital, palayamkottai, Tirunelveli.

### E. Methodology (Biochemical Analysis)

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.

## 3. Results and Discussion

The Biochemical analysis of the trial drug Thasadeepakkini chooranam was tabulated above in table. The trial drug, Thasadeepakkini chooranam contains,

1. Calcium
2. Sulphate
3. Chloride
4. Starch
5. Tannic acid
6. Unsaturated compounds

7. Reducing sugar

8. Amino acid

Analysis reveals the presence of calcium, sulphate, chloride, starch, tannic acid, unsaturated compounds, reducing sugar, amino acid in Thasadeepakkini chooranam.

## 4. Conclusion

Thasadeepakkini chooranam is a siddha drug taken from a Siddha literature and used in the treatments of anemia, indigestion, cough, fever, diarrhea and ageusia. The drug is screened for its biochemical property. Further, comprehensive pharmacological analysis is needed to evaluate its potency and the drug has its own potency to undergo further research.

## Acknowledgement

The author conveys her thanks to The Principal, Government Siddha Medical Collage palayamkottai for granting permission to execute this work in the college premises. I express my sincere thanks to Dr. M. P. Abdul Kader Jaylani M. D., Head of the Department, Department of Nanju Maruthuvam, and grateful thanks to Department of Bio chemistry, Government Siddha Medical College & Hospital, Palayamkottai and I thank my department faculties and thank my friends.

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