



## Biochemical analysis of Siddha polyherbal drug *Ilagu seena chooranam*

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### ABSTRACT

Vitiligo is an acquired depigmenting disorder of the skin resulting from loss of functional melanocytes. It often affects adult and children. It can have a variable age of onset, but many studies have reported that around 50% of the patients have an onset before the age of 18 years and a quarter before the age of 8 years. However, the social impact on children is that it leads to psychological distress and affects self-esteem of the children. In classical siddha literature vitiligo is named as venpadai which is one type of kuttam.

Among 18 varieties of kuttam, it is noted as venkuttam or *swethakuttam in yugichinthamani*. Various causes were given in literature includes constant irritation made in the skin by an object, ductless glands, malnutrition, genetic factors, secondary to syphilis, leprosy and some of the microorganisms. In siddha literature agathiyar vaithiya pillai tamil, Ilaguseena chooranam is indicated for venkuttam which is purely a herbal medicine that is safe and effective.

The research and analysis in this siddha medicine *Ilagu seena chooranam* will bring out the effectiveness of drug scientifically. The preliminary study and qualitative analysis will paved a way for further clinical studies in this trial drug. The biochemical analysis of the trial drug indicates the presence of Sulphate, Starch, Ferrous Iron, Unsaturated Compound, reducing sugar, Amino Acid revealed the enhancement of therapeutic action in vitiligo

### Keywords:

Siddha system, *venpadai*, *venpulli*, *swetha kuttam*, *Ilagu seena chooranam*, Biochemical analysis

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## INTRODUCTION

Siddha medicine is one of the most Ancient mother medicine of medical system of India. The word siddha comes from the tamil word for perfection. It equals to emphasis on the body, mind, and spirit and strives to restore the innate harmony of the individual. Siddha is the mother medicine of ancient tamil of Southern peninsula. The word siddha means established truth. Gradually, the system is spreading its benefits to the people of surrounding states also. Siddha system is guiding us to lead a perfect living in this world, starting from the first day of birth to the last day of death. Not only that, the system takes care even before the conception itself. Today's children are the future citizens of a nation.

To have a better nation, healthy citizens can contribute a lot. "Venpadai" is popularly known as "Vitaligo" has been a challenge to the medical world. Siddhars classified the diseases into 4448 types. Skin diseases are also included in these types. Venpadai or Venkuttam is also called "Swetha kuttam" which is one of the 18 varieties of "kuttam" noted in yugichinthamani. The drug from Siddha Literature (*Agathiyar vaithiya pillai tamil*) *Ilagu seena chooranam* is analysed for the biochemical composition.

## MATERIALS AND METHODS

**Table:1 Ingredients of Ilagu Seena Chooranam**

Drug Name	Botanical Name
<i>Parangipattai</i>	<i>Smilax china</i>
<i>Sivanaar vembu verpattai</i>	<i>Indigofera aspalathoides</i>
<i>Sirikurinjan verpattai</i>	<i>Gymnema sylvestre</i>
<i>Thalaichuruli verpattai</i>	<i>Aristolochia indica</i>
<i>Sangankuppi ilia</i>	<i>Clerodendron innerme</i>
<i>Sangan verpattai</i>	<i>Azima tetracantha</i>
<i>Vellarugu samoolam</i>	<i>Enicostemma axillare</i>
<i>Kaiyanthagarai samoolam</i>	<i>Eclipta prostrata</i>
<i>Senkathari verpattai</i>	<i>Capparis sepiaria</i>

## Collection, Identification and Authentication of the Drug:

The required herbal drugs were purchased from Siddha Medical College Campus. The required raw drugs were purchased from a well reputed country shop. They were Government Siddha Medical Botanist of Government Siddha Medical College, Palayamkottai.

## Purification of the Drug:

All the ingredients of this herbal formulation were purified according to the proper produce methods described in Siddha Classical Literature.

## Preparation of the drug:

All this drug individually purified then prepare fine powder and then mixed together and bottled up.

## Biochemical analysis:

Screening the drug *Ilagu seena chooranam* to identify the Biochemical properties present in the ingredient.

## Chemicals and drugs:

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

## Methodology:

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

## RESULTS AND DISCUSSION

The Biochemical analysis of the trial drug *Ilagu seena chooranam* was tabulated above in table 2.

The trial drug *Ilagu seena chooranam* contains.

1. Sulphate
2. Starch
3. Ferrous Iron
4. Unsaturated compound
5. Reducing sugar
6. Amino Acid

The mode of action of the trial drug *Ilagu seena chooranam* which brings about the pigmentation of skin in body, may be due to the presence of Sulphate, Ferrous Iron, Amino Acid in it.

Table 2. Qualitative analysis of *Ilagu seena chooranam*

EXPERIMENT	OBSERVATION	INFERENCE
<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	Absence of calcium.
<b>TEST FOR SULPHATE :</b> 2ml of the extract is added to 5% Barium Chloride solution	A white precipitate is formed	Indicates the presence of sulphate
<b>TEST FOR CHLORIDE</b> The extract is treated with silver nitrate solution.	No white precipitate is formed	Absence of chloride.
<b>TEST FOR CARBONATE</b> The substance is treated with concentrated Hcl.	No brisk effervescence is formed	Absence of Carbonate
<b>TEST FOR STARCH</b> The extract is added with weak iodine solution	Blue Colour is formed.	Indicates the present of Starch
<b>TEST FOR FERRIC IRON</b> The extract is acidified with Glacial acetic acid and potassium ferro cyanide.	No blue color is formed.	Absence of ferric iron
<b>TEST FOR FERROUS IRON</b> The extract is treated with concentrated Nitric acid and Ammonium thiocyanate solution.	Blood red colour is formed.	Indicates the presence of ferrous Iron.
<b>TEST FOR PHOSPHATE</b> The extract is treated with Ammonium Molybdate and concentrated nitric acid	No yellow precipitate is formed	Absence of Phosphate
<b>TEST FOR ALBUMIN</b> The extract is treated with Esbach's reagent	No yellow precipitate is formed.	Absence of Albumin.
<b>TEST FOR TANNIC ACID</b> This extract is treated with ferric chloride.	No blue black precipitate is formed	Absence of tannic acid.
<b>TEST FOR UNSATURATION</b> Potassium permanganate solution is added to the extract.	It gets decolourised	Indicates the presence of unsaturated compound
<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
<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% Ninydrin is sprayed over the same and dried it well.	Violet colour is formed.	Indicates the presence of Amino Acid.
<b>TEST FOR ZINC :</b> The extract is treated with Potassium Ferro cyanide.	No white precipitate	Absence of Zinc.

## CONCLUSION

*Ilagu seena chooranamis* a Siddha Drug taken from a Siddha literature used in the treatment of *venpadai*. The drug is screened for its bio chemical properties. Further, comprehensive pharmacological analysis are needed to evaluate its potency and the drug has its own potency to undergo further research.

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## CONFLICTS OF INTEREST

None declared.

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