



# SKM VAIDHYA AMIRTHAM

News Letter of SKM in Siddha, Ayurveda and Unani

Vol : 2 Issue : 1

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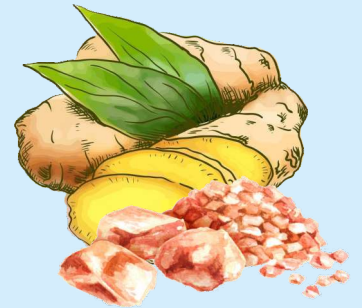
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**"भोजनाग्रेसदापथ्यंलवणाद्रकभक्षणम् ।  
अग्निसन्दीपनमूच्यंजिह्वाकण्ठविशोधनं ॥"**

Eating fresh ginger (small piece) with rock salt powder at the starting of any meal is always good for health. Doing so will boost digestion, increase the taste in food and cleans tongue and throat.



Articles are invited in Siddha, Ayurveda and Unani fields about clinical experience, rare medicinal preparations, successful treatments, Herbal informations and AYUSH Foods for our "SKM Vaidhya Amirtham" News letter which has around 10000 copies of circulation.

**Please send your Articles/Suggestions to:  
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# **ANTIMICROBIAL ACTIVITY OF SELECTED CHOORANAMS** **(POONAIKALI, PONNAVARAI, GUNMA UPPU,** **PARANGIPATTAI) AGAINST DRUG RESISTANT PATHOGENS**

## **INTRODUCTION :**

Infectious diseases are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi. Infectious diseases are the world's leading cause of premature deaths, killing almost 50,000 people every day. Infections due to variety of bacterial etiologic agents such as pathogenic *Escherichia coli*, *Salmonella* sp., and *Staphylococcus aureus* are most common. Among the various drug resistant pathogens, MRSA (Methicillin Resistant *Staphylococcus aureus*), VRSA (Vancomycin resistant *Staphylococcus aureus*) and ESBL (Extended spectrum  $\beta$ -lactamase) strains are in major concern. Extended spectrum  $\beta$ -lactamase (ESBL) is enzymes that mediate resistance to extended spectrum cephalosporin, cefotaxime, ceftriazone and ceftazidime and the monobactamaztreonam. Such enzymes are commonly found in *Escherichia coli*, *Klebsiella* sp., *Pseudomonas aeruginosa* and *Acinetobacter baumannii*.

To solve this problem all over the world scientists are searching various living resources for lead compounds for the development of novel drugs against multidrug resistant pathogens. A large portion of the world population depends mainly on traditional system of medicine for variety of diseases. Several hundreds of plants are used as of medicine and are a source of very potent and powerful drugs which is used for a long time and still being in use today. Plants produce a diverse range of bioactive molecules, making them rich source of different types of medicines. Most of the drugs today are obtained from natural sources or semi synthetic derivatives of natural products and used in the traditional systems of medicine. Medicinal plants are finding their way into pharmaceuticals, cosmetics, and nutraceuticals. In pharmaceutical field medicinal plants are mostly used for the wide range of substances present in plants which have been used to treat chronic as well as infectious diseases.

## **MATERIALS AND METHODS :**

### **Bacterial test pathogens**

Bacterial test pathogens were obtained from Centre for Laboratory Animal Technology and Research, Sathyabama University. Antibiotic susceptibility of strains were done on Mueller Hinton Agar plates using Kirby-Bauer disc diffusion method according to CLSI guidelines (CLSI, 2012) using antibiotics Methicillin, Amikacin, Gentamicin, Cefotaxime, ceftazidime, imipenem, chloramphenicol, Cefepime and Piperacillin/Tazobactam (Himedia).

Antifungal susceptibility testing was performed by NCCLS M44-A disc diffusion method<sup>9</sup> (NCCLS). Briefly, antibiotic discs containing Itraconazole (10 mcg), Ketoconazole (10 mcg), Clotrimazole (10 mcg), Fluconazole (25 mcg), Amphotericin-B (20 mcg) and Nystatin (100 units) were tested. The zones measured only that is showing complete inhibition and the diameters of the zones recorded to the nearest millimeter.

### **Confirmation of ESBL pathogens**

Extended spectrum beta lactamase production among gram negative bacteria was detected using combination disc method. In this test, 0.5 McFarland's standard test bacterial culture was inoculated on the surface of Muller Hinto Agar (MDA) plate. The cefotaxime (30  $\mu$ g) and cefotaxime-clavulanic acid (30  $\mu$ g/10  $\mu$ g) discs were placed 20 mm apart on the agar surface. Similarly, the ceftazidime (30  $\mu$ g) and ceftazidime-clavulanic acid (30  $\mu$ g/10 $\mu$ g) (Himedia Laboratories, Mumbai) discs were also placed for detection of esbl production. After incubating for overnight at 37°C, a  $\geq 5$  mm increase in the zone of inhibition diameter was measured and interpreted as positive for ESBL production. The Positive and negative control strain used for this study is *K. pneumoniae* ATCC 700603 and *E. coli* ATCC 25922 respectively.

### **Collection and description of chooranam**

Chooranams were procured from SKM Siddha and ayurvedha company (INDIA) limited, Erode. The ingredients and organoleptic characters of the chooranams were noted.

### **Preparation of chooranam extract**

Extraction methods involve separation of medicinal active functions of chooranams from inactive/inert components, by using selective solvents and extraction technology. Solvents diffuse into chooranams and solubilize compounds of similar polarity. Quality of chooranam extract depends on choice of solvents and the extraction. Preparation of aqueous, solvent extracts and separation of crude extracts by the standard procedures.





### Antimicrobial activity of aqueous extracts

The antimicrobial activity of chooranam aqueous extracts was studied by well diffusion method using Muller Hinton agar (MHA) plates. About 18 hours old bacterial culture was prepared and inoculated into MHA plates. 5 mm diameter well was cut on plates. Each 10 µl of aqueous plant extracts were added in wells using micropipette. 10 µl sterile distilled water was used as a control well. All the plates were incubated at 37°C for 24 hours and plates were observed for zone of inhibition.

### Antimicrobial activity of solvent extracts

The antimicrobial activity of solvent extracts was studied by disc diffusion method using MHA plates. About 18 hours old bacterial cultures were inoculated into MHA plates. 0.25mg of crude extracts were added into sterile filter paper disc (5 mm diameter) and allowed to dry at room temperature for few minutes. Crude chooranam extract impregnated discs were placed on MHA plates inoculated with test bacterial strains. Sterile empty disc was used as a control. All the plates were incubated at 37°C for 24 hours. After incubation the plates were observed for zone of inhibition.

### Partial purification of active compound by thin layer chromatography

The crude compound was purified by using silica gel thin layer chromatography using method described by Saravanan et al. 12. To find out the best solvent system to separate the crude compound, solvents such as methanol, chloroform, acetic acid, n-butanol, n-hexane and water were used in different proportions. After running, the sheet was kept at room temperature for the complete drying of the plate and the separated spots were visualized in iodine chamber. Rf value of the spots on the TLC plate was determined by;

$$\text{Rf value} = \frac{\text{Movement of the solute from the origin}}{\text{Movement of solvent from the origin}}$$

### Spectral analysis of purified compound

Spectral analyses of purified compound were carried out at Centre for Ocean Research, Sathyabama University, Chennai, Tamil Nadu.

### UV spectral analysis and FT-IR analysis used as per the standard methodology.

### Minimum inhibitory concentration (MIC) of the purified compound

About 10 sterile glass tubes were taken and marked as 1- 10. Each tube 500 µl of Mueller Hinton Broth was added in the first eight tubes. Each 900 µl of Mueller Hinton broth was added to the 9th and 10th tubes and marked as C1 and C2 respectively. 500 µl of working stock solution was added to the 1st tube. From the first tube 500 µl was transferred to second tube and then serially transferred up to eight tubes. The one tube marked as C1 was the culture control and other tube marked as C2 was the broth control. 500 µl of bacterial inoculums was transferred to all the tubes except C2. All the tubes were incubated at 37°C for 18-24 hours. After incubation all the tubes were observed for growth inhibition. The lowest antibiotic concentration which showed no turbidity was taken as minimal Inhibitory concentration (MIC).

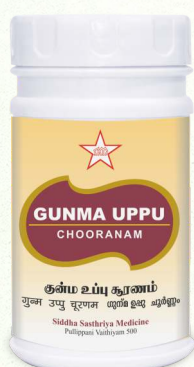
## RESULTS AND DISCUSSION :

Infections due to a variety of bacterial agents such as pathogenic *E. coli*, *Vibrio cholera*, *Shigella* spp., *Salmonella* spp., *Pseudomonas* spp., *Klebsiella* spp. and *Staphylococcus aureus* are the most common diseases causing microorganisms.

Plant based antimicrobials represent a vast untapped source for medicines and further exploration of plant microbial need to occur. Contrary to the synthetic antibiotic, antimicrobials of plant origin are not associated with many side effects and have an enormous therapeutic potential to heal many infectious diseases. The use of medicinal plants as a basis for relief from sickness can be traced back over five millennia to written documents of the early civilization in India, China and the Near east, but it is doubtless an art as old as mankind. The people of India have a very long-standing tradition in the use of natural medicines and the local practices are still quite common in the treatment of diseases.

The parangipattaichoornam though simple and cost effective has diverse medicinal properties and used in the treatment of various diseases like Granthi, soolai, Megam, Vettai, Vandukadi, Padaigal, Viranangalkandamalai. In this present study also four different Choornams were studied for antimicrobial evaluation, and its characterization. The ingredients and organoleptic characters of all the choornams were observed (Table 1 & 2). The test pathogens used in this study were identified and confirmed by standard procedures.



**Table 1: Ingredients of Chooranams**

Chooranams	Ingredients	Botanical Name	Parts Used
Parangipattai	Purified parangipattai Sugar	Smilax china Saccharum officinarum	Roots
Ponnavarai	Ponnavarai Leaves	Cassia senna	Leaves
Poonakali	Velvet bean	Mucuna prurita	Seeds
Gunma uppu	Sottruuppu, Savattuuppu, Valaiyaluppu, Kalluuppu, Vediuppu, Indhuuppu, Butter milk, Varikumatti pazhasaaru	Sodium chloride, Alkaline earth salt, Sandevere glass salt, Artificial salt, Potassium nitrate, Rock salt, Bos indicus, Citrulluscolocynthus	----

**Table 2: Organoleptic characters of chooranams**

Parangipattai	Muddish Brown	Granulated	Mixed	Pungent	Slightly sweet
Ponnavarai	Olive green	Fine powder	Pure	Pungent	Bitter/Slightly sweet
Poonakali	Creamy white	Fine powder with black granules	Pure	Musky	Bitter
Gunma uppu	Light sandal	Granulated	Mixed	Pungent	Salty

All the chooranams used in this study were extracted for crude compounds using various solvents such as methanol, acetone, chloroform and aqueous. Antibiotic susceptibility of seven test bacterial pathogens against standard antibiotics. From the observation *S. aureus* showed resistance against more than four antibiotics including methicillin. *K. pneumoniae* and *P. aeruginosa* showed resistance to more than three antibiotics. *E. coli*, *S. typhi* showed resistance against four antibiotics tested. From the observation the *S. aureus* strains was identified as Methicillin resistant *Staphylococcus aureus* (MRSA) and *E. coli*, *K. pneumoniae*, *P. aeruginosa*, *S. typhi* was identified as drug resistant pathogens.

After incubation in SDA medium, the yeast shows Gram positive ovoid cells, Chlamydospores production on Corn Meal agar, the germ tube production at 45°C were considered as *Candida albicans*. Antifungal test results indicate that the *Candida albicans* isolate was resistant to Nystatin, Clotrimazole, Itraconazole, Fluconazole and susceptible to Amphotericin-B, Ketoconazole.

Antimicrobial activity of aqueous extract was studied by well diffusion method. In this study aqueous extract of Poonakali, Parangipattai and Gunma uppu showed activity against *Candida albicans* and *Pseudomonas aeruginosa*. Among the aqueous extract prepared from four chooranams, extracts from Parangipattai, Gunma uppu, Poonakali showed activity against only *Candida albicans* and *Pseudomonas aeruginosa*. Aqueous extracts of Ponnavarai doesn't show activity against any of test pathogens.

In this study also the parangipattai chooranam shows antimicrobial activity against drug resistant pathogens and the results of FTIR analysis confirmed the presence of phenol, alkanes, aldehyde, secondary alcohol, amino acid, aromatic amines. The MIC of compound Spot-A against *Staphylococcus aureus* and *Proteus vulgaris* were determined as 6.25 µg/ml, 12.5 µg/ml respectively.

## CONCLUSION :

Finding of the present work evidenced that the Chooranams investigated in this study deserves the potential for drug resistant pathogens especially the parangipattai chooranam which shows activity against all the test pathogens. Structure elucidation and characterization of PPT A compound of Parangipattai chooranam need further studies to confirm its potential. The parameters obtained from this study are sufficient to authenticate for standardization of Parangipattai chooranam.





## LOHASAVA (LOHASAVAM)

### INTRODUCTION :

Lohasavam is an Ayurvedic iron tonic as well as anti-obesity medicine. It promotes weight loss by casting off the accumulated fats in the body due to its LEKHANA KARMA. In addition to these benefits, it is also helpful in the management of diseases such as jaundice, hepatitis, spleen enlargement, fatty liver, malabsorption syndrome, cough, asthma etc.

### PHARMACOLOGICAL ACTIONS :

Lohasava has USHNA VIRYA (Hot potency) and acts as LEKHANA (reduces fatty tissue), hematogenic and Haematinic. Therefore, it can help to reduce weight and increase hemoglobin level. As it contains iron content, so it is more likely to be effective in iron deficiency anemia.

### MEDICINAL PROPERTIES :

Lohasava has following medicinal properties.

- Haematinic (increases hemoglobin levels)
- Hematogenic (helps in formation of red blood cells)
- AamPachak (Detoxifier)
- Anthelmintic
- Antihyperlipidemic
- Cardioprotective
- Cholagogue (promotes the discharge of bile)
- Depurative (purifies blood)
- Anti-obesity & Fat Burner
- Anti-inflammatory
- Mucolytic
- Tonic

### THERAPEUTIC INDICATIONS :

Lohasava is helpful in following health conditions:

- Anaemia
- Jaundice
- Spleen enlargement (Splénomegaly)
- Liver enlargement (Hepatomegaly)
- Obesity
- Cardiac Weakness & Heart Diseases
- Chronic Fever
- Piles
- Abdominal Diseases
- Productive cough
- Low digestive power and poor appetite
- Irritable bowel syndrome (prominent symptoms – loose stools with mucus content and associated with other problem iron deficiency anemia)
- Breathing troubles due to anemia or low iron level
- Fistula

### AYURVEDIC PROPERTIES :

- GUNA (Main Quality)- LAGHU (Light), USHNA (Hot), RUKSHA (Dry)
- VIRYA (Potency)- USHNA (Hot)
- PRABHAVA (Action)- Haematinic
- DOSHA KARMA (Effect on Humors) - Pacifies KAPHA & VATA DOSHA
- Dhātu (Tissue) - Effect RASA, RAKTA, MEDAS
- Organs Effect - Liver, Spleen, Stomach, Intestine, Heart & Blood



### INGREDIENTS (COMPOSITION) :

Common name	Botanical name
Loha Bhasma	Loha Bhasma
Haritaki	Terminalia chebula
Bibhitaki	Terminalia bellirica
Amla (Indian Gooseberry)	Emblīca officinalis
Shunti (dried ginger root)	Zingiber officinale
Maricha (Black Pepper)	Piper nigrum
Pippali (Long Pepper)	Piper longum
Ajamoda (Carom Seeds)	Trachyspermum ammi
Vidanga (False Black Pepper)	Embelia ribes
Musta (Nagarmotha) – Nut Grass	Cyperus rotundus
Chitrak root	Plumbago zeylanica
Dhataki flowers	Woodfordia fruticosa
Water, Honey, Guda	Jaggey





## LOHASAVA BENEFITS & MEDICINAL USES :

Lohasava acts on blood, heart, spleen, liver and fatty tissues, so it is used in diseases of these organs. Its main benefits are discussed below:

### Anemia

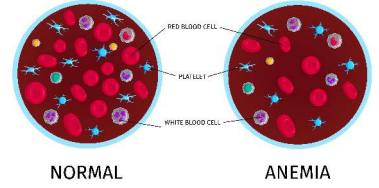
Lohasava is haematinic and hematogenic. It contains a good amount of iron, which can help to treat iron deficiency anemia. It is a good formulation, which increases haemoglobin level significantly.



### Obesity

Lohasava helps to reduce body fat by increasing the metabolic rate and fat usability. It is likely to promote inch loss and belly fat significantly.

Iron deficiency anemia is also linked with obesity and weight gain. Therefore, if the obese or overweight patient also has anemia, then Lohasava is the most suitable remedy for him.



### Jaundice

In Ayurveda Lohasava is used for the treatment of obstructive jaundice. It reduces the blockage due to its LEKHANA KARMA (i.e. scrape away excess Kapha, fat, blockage and unwanted things) and improves the bile flow and its excretion. It is more suitable if the patient has jaundice with diarrhoea and low digestive fire because of its astringent, digestive stimulant and stomachic actions.

### Jaundice



### Chronic Fever and Debility

Lohasava is helpful for treating chronic fever and debility occurring after fever including malaria and typhoid fever. It increases digestive fire, so it improves appetite. Many patients suffer from splenomegaly and hepatomegaly after having malaria. These conditions are also treatable with Lohasava.

## DOSAGE & ADMINISTRATION :

The general dosage of Lohasava is as follows.

- Children - 2.5 to 10 ml
- Adults - 10 to 20 ml
- Maximum Possible Dosage 60 ml Per Day (in divided doses)

(Twice a day with Equal Amount of Water)

Best Time to Take: Immediately After Food

### SIDE EFFECTS OF LOHASAVA :

However, there are no serious side effects of Lohasavam, but some patients feel distaste for a few minutes after taking it, which may be due to its astringent taste. Some patients may also experience nausea or vomiting after taking it due to its taste. Other side effects may be Heartburn or Burning sensation in abdomen and Stomach upset.

### PREGNANCY & LACTATION :

There is no reliable information available for Lohasavam use in pregnancy. However, according to ingredient analysis, it contains Chitraka and other ingredients with Hot Potency, which make it unsuitable in pregnancy. Therefore, pregnant women should avoid using Lohasava.

### PRECAUTION :

Diabetic people should regularly check their blood glucose level if taking Lohasava because it contains sugar content, which may increase the blood glucose level. For precautionary purposes, diabetic patients can cut down the sugar intake from other food sources.

लोहचूर्णं त्रिकटुकं त्रिफलां च यवानिकाम् ।  
विडङ्गं मुस्तकं चित्रं चतुःसङ्ख्यापलं पृथक् ॥३४॥  
धातकी कुसुमानां तु प्रक्षिपेत् पलविंशतिम् ।  
चूर्णीकृत्य ततः क्षौद्रं चतुःषष्टिपलं क्षिपेत् ॥३५॥  
दद्यात् गुडतुलां तत्र जलद्रोणद्वयं तथा ।  
घृतभाण्डे विनिक्षिप्य निदध्यान्मासमात्रकम् ॥३६॥  
लोहासवममु मर्त्यः पिबेत् वह्निकरं परम् ।  
पाण्डुश्वयथु गुल्मानि जठराण्यर्शसां रुजम् ॥३७॥  
कुष्ठं प्लीहामयं कण्डूं कासं श्वासं भगन्दरम् ।  
आरोचकं च ग्रहणीं हृद्रोगं च विनाशयेत् ॥३८॥  
शार्ङ्गधर संहिता मध्यम खण्ड १०/३४-३७





## Siddha New Softgel Capsules



### Indications

- Powerful purgative (Virechana) drug for all type of diseases
- Helps to eliminate the toxic Doshas and Amam effectively
- Herbo-mineral drug have wide range of therapeutic uses

### Dosage

Take 1 or 2 capsule with prescribed adjuvant in morning on an empty stomach (or) As directed by the Physician.



### Indications

- Effective for the prevention or alleviation of inflammation in the uterus
- Regularize the menstrual cycle
- Improves sexual vitality

### Dosage

Take 3 capsules with milk or rice water in morning on an empty stomach for 3 days from the 3rd day of menses (or) As directed by Physicians.



### Indications

- Acts against the Causes of the inflammation
- To treat ulcerating tumours
- It prevents the tissue death

### Dosage

Take 2 capsules with milk or rice water in morning on an empty stomach for 8 days (or) As directed by Physician.



### Indications

- Treats inflammation and scar tissue forming in the pelvic region
- Ensures the regular menstrual cycle
- Treats Amenorrhea & dysmenorrhea

### Dosage

Take 2-4 capsules with milk or rice water in morning on an empty stomach for 3 days from the 1st day of menses (or) As directed by Physicians.

## Exercise at old age

नचैनंसहसाक्रम्यजरासमधिरोहति।  
स्थिरीभवतिमांसंचव्यायामाभिरतस्यच॥

Old age does not attack the exercising man suddenly, the body and flesh of the exercising man are all stable.





# AYURVEDA NEW SOFTGEL CAPSULES

## MAHATHIKTHAKA GHRITAM SAPTAVARTI

Ref - Bhaishajya Ratnavali

SOFTGEL CAPSULES



### Indications

- Helps to treat pruritus, carbuncle, chronic ulcer, lymphadenitis and oedema.
- Highly effective in skin diseases like boil, rashes and pus discharge.
- Used in treating Urticaria, Itching skin rashes, Allergic hives, Allergic skin rashes.

### Dosage

1-2 Capsules twice daily after food (or) As directed by physician

## MAHAKALYANAKA GHRITAM SAPTAVARTI

Ref - Ashtanga Hridayam

SOFTGEL CAPSULES



### Indications

- Good for Mental disorders, stress and anxiety.
- Helps to treat loss of memory and speech defects.
- Helps to improve overall health and well being.
- Best Ayurvedic medicine for Apasmara.

### Dosage

1-2 Capsules twice daily after food (or) As directed by physician

## GUGGULU TIKTAKA GHRITAM SAPTAVARTI

Ref - Ashtanga Hridayam

SOFTGEL CAPSULES



### Indications

- Best medicine for joint pain and inflammation.
- Helps strengthen bones and muscles.
- Highly effective in treatment of osteoporosis.

### Dosage

1-2 Capsules twice daily after food (or) As directed by physician

## INDUKANTHA GHRITAM SAPTAVARTI

Ref - Sahasrayogam

SOFTGEL CAPSULES



### Indications

- Relieves indigestion, bloating and peptic ulcers.
- Stimulates digestion, metabolism and hunger.
- Enhance immunity and protect against recurring ailments.
- Effective in Gastritis and other Vata related disorders in the stomach region.

### Dosage

1-2 Capsules twice daily after food (or) As directed by physician

## PHALASARPIS SAPTAVARTI

Ref - Ashtanga Hridayam

SOFTGEL CAPSULES



### Indications

- Promotes womb nourishment and boosts immune responses for women reproductive health.
- Supports reproductive health and emotional well being by maintaining healthy hormone levels.
- Used in the treatment of female infertility.
- Best medicine for uterine disorders.

### Dosage

1-2 Capsules twice daily after food (or) As directed by physician



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