

# ANTIMICROBIAL ACTIVITY OF SIDDHA DRUG – “PATTAI CHOORANAM”

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**Abstract:** Human got diseases from Bacterial and Fungal infection commonly therefore siddha drugs should undergo with block the spread of microbial contamination of the body. Prepared medicine can enhance and lost their antimicrobial activity by the procedure of compound drugs this was a general rule of all system of medicine because of phytochemical reaction between the raw materials on process reactions. In this study was concluded as; Siddha Drug – Pattai Chooranam was Resistant for 10µl, 20 µl, 30µl Sample Loads to *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella sps.*, *Candida sp.* With control of antimicrobial activities against both bacterial and fungal pathogens (0.5 MCF) using agar well diffusion method along with a standard broad-spectrum antibiotics Chloramphenicol (30mcg) for bacterial pathogens and Ketoconazole (30mcg) for fungal pathogen. This Pattai Chooranam may be works to promote immune enhancer to body against microbial activity inside the body therefore it resist selected pathogens.

**IndexTerms** -Siddha Compound Medicine, Pattai Chooranam, Human Pathogen, Antimicrobial activity.

## I. INTRODUCTION

Siddha system is a traditional system of Indian medicine by the Tamilian. Siddha system of medicine treats disease and also prevents disease. In this manner, siddha medicines were list to cure microbial contamination of the body internal and external perfectly. Human got diseases from Bacterial and Fungal infection commonly therefore siddha drugs should undergo with block the spread of microbial contamination of the body.

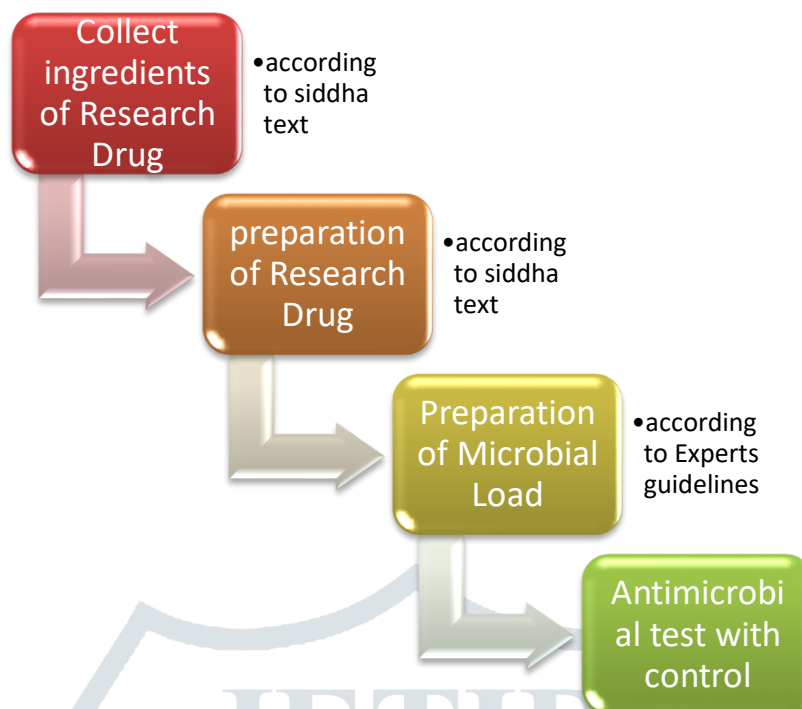
Hence so many raw materials were performed antimicrobial activity against human pathogens as; bacteria and fungus. Same way, prepared medicine that collection of many raw materials went certain process can enhance and lost their antimicrobial activity by the procedure of compound drugs this was a general rule of all system of medicine because of phytochemical reaction between the raw materials on process reactions.

This research study deal with antimicrobial activity study of pattai chooranam performed with international standard microbial screening test to selected micro-organisms which are human pathogens such as; *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella sps.*, *Candida sp.* With control of antimicrobial activities against both bacterial and fungal pathogens (0.5 MCF) using agar well diffusion method along with a standard broad-spectrum antibiotics Chloramphenicol (30mcg) for bacterial pathogens and Ketoconazole (30mcg) for fungal pathogen.

## II. MATERIALS AND METHODS

**Research type:** Analytical research

**Research Period:** 03 months

**Research Method:****Preparation of the research drug – Pattai Chooranam:****Ingredients of drug:**

1. Purified Parangipattai - 05 palam
  2. Purified Sulphur - 02 palam
  3. Sathikkai
  4. Sathipaththri
  5. Ilavangam
  6. Sirunaagampoo
  7. Amukkarakizhangu
  8. Kodiveliverpattai
  9. Sadamanjil
  10. Pachaikarpooram – 2 ½ varagan
- 01 palam (35g)  
(each one)

**Preparation:** prepare the powder of all ingredients with separately and mixed well.

**Dose:** 1 ½ varagan – 2 ½ varagan

Twice a day for 21 days

**Adjuvant:** Ghee, Honey, Butter

**Indication:** 21 types of *prameham*, *soolai*, *kiranthi*, *mehavooral*, *mehavayu*.

**Antimicrobial activity done and Authorized by** Dr. K. ThangaMariappan, Ph. D in the Vivek Institute of Laboratory Medicine, 1159, K. P. Road, Nagercoil -629 003, Kanyakumari District.

**Agar Well Diffusion Test**

The antibacterial screening of the given samples was carried out by determining the zone of inhibition using agar well diffusion method. All these drug extracts were tested against pathogenic bacteria and yeast strains including 01 Gram positive (*S. aureus*), 02 Gram negative organism (*E. coli*, *Klebsiella sps.*) and 1 yeast (*Candida sp.*).

**Bacterial Inoculums Preparation**

Inoculum of *Escherichia coli*, *Klebsiella sps* and *Staphylococcus aureus* were prepared individually in nutrient broth medium and kept for incubation at suitable temperature.

### Fungal Inoculum Preparation

Inoculum is prepared by picking five distinct colonies of approximately 1mm from 24 hours old culture grown on Sabouraud Dextrose Agar are suspended in 5ml of sterile 0.85% Saline and incubated at  $35 \pm 2^\circ\text{C}$ .

### Procedure:

This method was followed to determine the antimicrobial activity. Muller-Hinton Agar and Antimycotic Sensitivity Test Agar media plates were swabbed (sterile cotton swabs) with the prepared bacterial inoculum and fungal inoculum. After inoculation, wells with the size of 10 mm diameter and about 2 cm a part were made in each of these plates using sterile cork borer. About 100  $\mu\text{l}$  of different concentrations of drug solvent extracts were added into the wells and allowed to diffuse at room temperature for 2 hrs. The plates were incubated for bacterial growth at  $37^\circ\text{C}$  for 24 hrs. and for fungal growth at room temperature for 3 days. After incubation, the diameter of the inhibition zone (mm) was measured and the activity index was also calculated.

### Media Used:

#### Composition of Muller Hinton Agar Media

Beef Extract	: 02.00 gm / Lit
Acid Hydrolysate of Casein	: 17.50 gm / Lit
Starch	: 01.50 gm / Lit
Agar	: 17.00 gm / Lit

#### Composition Antimycotic Sensitivity Test Agar

Ingredients	
Casein enzymichydrolysate	: 19.00 gm / Lit
Yeast extract	: 10.00 gm / Lit
Glucose	: 20.00 gm / Lit
Sodium citrate	: 10.00 gm / Lit
Disodium phosphate	: 1.00 gm / Lit
Agar	: 25.00 gm / Lit
Final pH ( at $25^\circ\text{C}$ )	$6.6 \pm 0.2$

### III. RESULT AND DISCUSSION

**Table1: Antimicrobial Activities of Various Samples by Agar Well Diffusion Method**





S.No.	Bacterial Pathogens	Zone of Inhibition (mm)			Result	
		Positive Control	Sample Load ( $\mu\text{l}$ )			
			10 $\mu\text{l}$	20 $\mu\text{l}$		30 $\mu\text{l}$
1.	<i>Escherichia coli</i>	Chloramphenicol-30mcg(25 mm)	R	R	R	Resistant
2.	<i>Staphylococcus aureus</i>	Chloramphenicol-30mcg (23 mm)	R	R	R	Resistant
3	<i>Klebsiella sps.</i>	Chloramphenicol-30mcg (20 mm)	R	R	R	Resistant
4	<i>Candida sp.</i>	Ketoconazole-30mcg (24mm)	R	R	R	Resistant

**Interference:** The given sample was screened for their antimicrobial activities against both bacterial and fungal pathogens (0.5 MCF) using agar well diffusion method along with a standard broad-spectrum antibiotics **Chloramphenicol (30mcg)** for bacterial pathogens and **Ketoconazole (30mcg)** for fungal pathogen.

After incubation, the zone production on the plates were read as per the standard method and correlated with the result of Chloramphenicol and Ketoconazole. The results illustrated that the given samples have no antibacterial against the tested pathogens as given in the table 1.

**Note:** The samples may be subjected to identify its chemical properties which relevant to antimicrobial activities.

Table2: Antimicrobial Activities pictures

S.No	Bacterial Pathogens	Plates
1.	<i>Escherichia coli</i>	
2.	<i>Staphylococcus aureus</i>	
3	<i>Klebsiella sps.</i>	
4	<i>Candida sp</i>	

#### IV. CONCLUSION

In this study was concluded as; Siddha Drug – Pattai Chooranam was Resistant for 10 $\mu$ l, 20 $\mu$ l, 30 $\mu$ l Sample Loads to *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella sps.*, *Candida sp*. With control of antimicrobial activities against both bacterial and fungal pathogens (0.5 MCF) using agar well diffusion method along with a standard broad-spectrum antibiotics Chloramphenicol (30mcg) for bacterial pathogens and Ketoconazole (30mcg) for fungal pathogen. This *Pattai Chooranam* may be works to promote immune enhancer to body against microbial activity inside the body therefore it was resist selected pathogens.

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