

## IN VITRO ANTIMICROBIAL ACTIVITY OF THE SIDDHA DRUGS SEENTHIL SARKARAI AND NILAVEMBU KUDINEER AGAINST LEPTOSPIRA

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### ABSTRACT

Usage of herbal drugs has increased to fight with the acute and chronic diseases of human kind. In the present study the antimicrobial activity of Siddha drugs Seenthil sarkarai and Nilavembu kudineer against leptospira was investigated. Two drugs were separately screened for their anti leptospiral potency. EMJH liquid medium was used for culture. Different concentration of drugs was used to see the antimicrobial activity. After seven days the culture was checked for the concentration of the growth. Seenthil sarkarai in the dilution of 500µl and above shows the full inhibition of Leptospira but in the dilution of 100 µl, there was no inhibition. Nilavembu kudineer in the in the dilution of 2.5 ml full inhibition was observed. But in dilution of 100µl to 2 ml growth was observed.

This study indicates both the drugs are having anti-leptospiral activity but the drug Seenthil sarkarai was shown in lesser concentration of MIC compare to the drug Nilavembu kudineer for antileptospiral activity.

**Keywords:** Siddha medicine, Seenthil sarkarai, Nilavembu kudineer, Antimicrobial, Anti-leptospiral.

### INTRODUCTION

Siddha system forms an important part of the Indian system of medicine popular in South India. Numerous Siddha formulations are indicated for the suram (Fever) in Siddha text. Fever is classified into 64 types according to the causative factors in Siddha literatures (R 1)

Leptospirosis is an infectious disease with symptoms (R2, R3) like fever, chills, headache, severe myalgia and Siddha drugs often prescribed are seenthil sarkarai and Nilavembu kudineer (R4&R5). Antioxidant property (R6) of seenthil sarkarai contributes to prevention of renal failure. Both the drugs are hepato-productive in nature(R7&8).

Drug - 1: Seenthil sarkarai is prepared from single herb namely *Tinospora cardifolia*. It is claimed for fever in Siddha literature. Antimicrobial and anti pyritic activity is proved for the herb seenthil in (R9)

Drug-2: Nilavembu kudineer is a poly herbal preparation indicated for fever in the text. Antimicrobial and anti pyritic activity is proved for Nilavembu and their publication is available (R10)

Therefore, this study was designed to screen the antimicrobial activity for the Seenthil sarkarai and Nilavembu kudineer against leptospira and work was carried out in Department of Experimental Medicine, The TN Dr. M. G. R. Medical University, Chennai-32.

### Aim

To study anti- Leptospiral activity of Seenthil sarkarai and Nilavembu kudineer and provide scientific evidence for Siddha medicines.

### RESULTS

Table 1: Anti leptospiral activity of Seenthil sarkarai

Concentration of the Drug	Inhibition of growth
100 µl	No inhibition
500 µl	Full inhibition
1000 µl	Full inhibition

### MATERIALS AND METHODS

#### 1. Nilavembu kudineer 2. Seenthil sarkarai

#### Preparation of Extract

The Siddha drugs were purchased from the Impcops and used for the screening.

#### Nilavembu kudineer

Decoction was prepared as per the procedure given in the text (R4) and used.

#### Seenthil sarkarai

*Tinospora cardifolia* is a well known medicinal plant of Siddha with various pharmacological as well as medicinal properties . Seenthil sarkarai is prepared as per procedure given in the text. It was dissolved with milliq water and filtered and used.

#### Preparation of medium

EMJH liquid media (2.3gm of medium base powder in 900ml Distilled water) + 100ml of leptospira enrichment (Difco)

#### Sub culture of Leptospira

Taken 5ml of EMJH medium in to all culture tubes and inoculated the leptospira from stock culture .

#### Concentration of Siddha Drugs

Five ml of Leptospira culture was taken in a sterile test tube. The drugs were dissolved in milliq water. Different concentration of drugs was used to see the antimicrobial activity. Each concentration was mixed with 5ml of Leptospira culture. Each tube was labeled and kept it for incubation at 30°C for 4-7 days. After incubation, one loop full of culture was placed in the microscopic slide and seen under dark field microscope for active growth.



Fig. 1:

This results shows that the drug Seenthil sarkarai has antileptospiral activity. And the above figure shows, in the dilution of 100 µl, there was no inhibition but in the concentration of 500µl and above shows the full inhibition of Leptospira.

Table 2: Anti leptospiral activity of Nilavembu kudineer

Concentration of Nilavembu kudineer	Inhibition of growth
100µl	No inhibition
200µl	Approximately 100 live leptospira per field observed
500µl	Approximately < 50 leptospira live observed
1ml	Few dead leptospira observed
2ml	No growth but seen few dead leptospiras
2.5ml	Nil growth

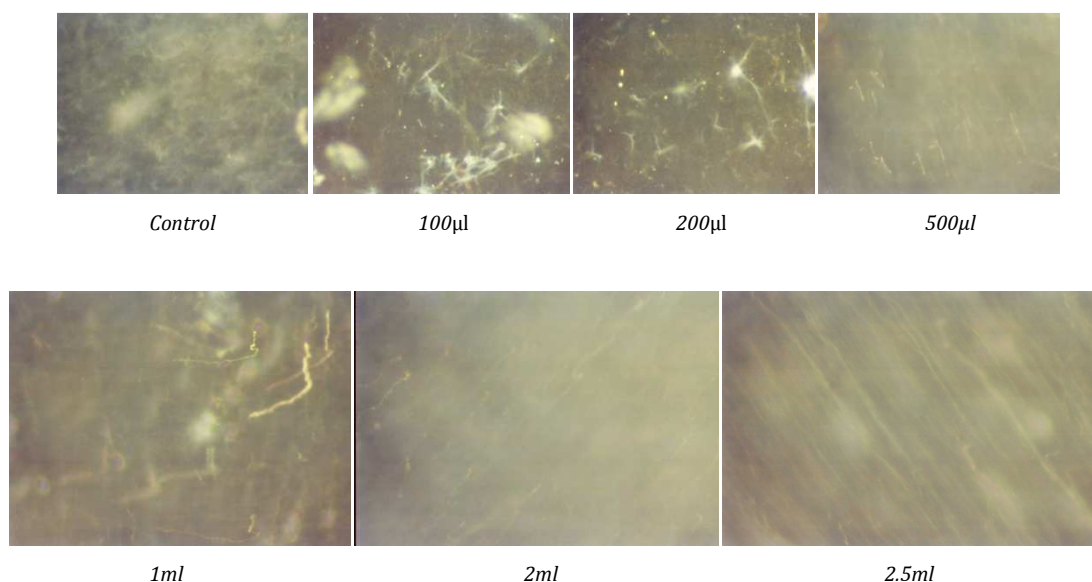


Fig. 2:

This figure shows that the drug Nilavembu kudineer has the antileptospiral activity. From the dilution of 100 µl to 2 ml , growth was observed but in the dilution of 2.5 ml full inhibition was observed.

#### DISCUSSION

It is seen worldwide upsurge in use of Siddha treatment for acute and chronic conditions for the sake of preventing the complications and to avoid huge procedures.

These study drugs are administered for various fever in the Private and Government Siddha hospitals for last more than 100 years, The same drugs are prepared and administered by traditional practitioners for last 400 years as per the text.

In recent advance, the Siddha drugs are screened by the researchers of various disciplines for example pharmacologist and other medical and para medicals. In this scenario, antidiabetic , analgesic, antiulcer, anticancer, spasmodic, hepatoprotective, nephroprotective,

antioxidant activities and microbial potency for the study drugs are proved through research and also published in various journals. But no data regarding he anti-leptospiral potency for the study drug is available. Clinically these drugs prove their effect against various types of fever in daily practice.

In the present study the Siddha drugs Nilavembu kudineer and Seenthil sarkarai were tested for their antimicrobial activity against leptospira, almost both is having antileptospiral activity but the drug Seenthil sarkarai was shown in lesser concentration of MIC compare to the drug Nilavembu kudineer for antileptospiral activity.

This study shows only in vitro antimicrobial activity of the drug but it is planned to do further study on *in vivo* activity of these drugs.

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