



Antimicrobial screening Of Siddha formulation Sindhu vallathi Mezhugu (SVM)

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ABSTRACT

Sindhu Vallathi Mezhugu is a Siddha formulation indicated for mainly Bavuthiram (fistula), Gunmam (ulcer), Kudalpaduvan (ulcerative colitis) and Kaladaippu (kidney stone) etc. This drug was tested for antimicrobial property against *E. coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Candida albicans* by agar disc diffusion method and hence the result of In-vitro antimicrobial assay reveals that the formulation Sindhu Vallathi Mezhugu (SVM) possess significant anti-microbial activity against *Staphylococcus aureus*, *Enterococcus faecalis*, *Candida albicans* and does not show antimicrobial activity on *E. coli*.

Keywords:

Siddha formulation, Anti-microbial activity, Sindhu Vallathi Mezhugu

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INTRODUCTION

Siddha system of medicine is the ancient, holistic system of medicine. Siddha system of treatment has many formulatory medicines for both internal oral medication and external medicines. These formulations are made of herbal, mineral, metallic, and animal products. SVM is a herbomineral formulatory preparation internally used for the treatment of Bavuthiram (*fistula*), Gunmam (*ulcer*), andavaatham (*Hydrocele*), kudalpaduvan (*ulcerative colitis*), Soolai (*pain*) etc, as mentioned in the Siddha classical literature (The Siddha Formulary Of India Part-II, 2011). The diseases mentioned above are mostly caused by the organisms such as *E. coli*, *Enterococcus faecalis*, *Candida albicans* etc.

So the novelty of the study is to screen the anti-microbial & anti-fungal activity of the trial drug SVM herbo mineral formulation and to give added strength for further more studies on this same drug SVM. This study may provide a scientific rationale for its usage. The need for more rigorous scientific research on traditional medicine is strongly advocated for larger acceptance & visibility.

MATERIALS AND METHODS:

Ingredients of SVM:

Palam puli (*Tamarindus indica*)

Serankottai (*Semecarpus anacardium*)

Murungai elai (*Moringa oleifera*)

Kariuppu (*Sodium chloride*)

Venkaram (*Borax*)

Vediuppu (*Potassium nitrate*)

Sample Preparation:

The given sample was dissolved in the concentration of 0.1g/1ml of Aqueous and Ethanol

Test organism:

The test microorganisms used for antimicrobial analysis for *Staphylococcus aureus* MTCC 737,

Enterococcus faecalis MTCC 439, *E. coli* MTCC 443 and *Candida albicans* MTCC 227 isolated from clinical samples **inbiotics, kanyakumari**.

NUTRIENT BROTH PREPARATION:

Pure culture from the plate were inoculated into Nutrient Agar plate and sub cultured at 37°C for 24 h. Inoculum was prepared by aseptically adding the fresh culture into 2 ml of sterile 0.145 mol/L saline tube and the cell density was adjusted to 0.5 McFarland turbidity standard to yield a bacterial suspension of 1.5×10^8 cfu/ml. Standardized inoculum Used for Antimicrobial test.

ANTI-BACTERIAL TEST:

The medium was prepared by dissolving 38 g of Muller Hinton Agar Medium (Hi Media) in 1000 ml of distilled water. The dissolved medium was autoclaved at 15 Lbs pressure at 121°C for 15 min (pH 7.3). The autoclaved medium was cooled, mixed well and poured petriplates (25 ml/plate) the plates were swabbed with Pathogenic Bacteria culture viz. analysis *Staphylococcus aureus*, and *E. coli*. Finally, About 10 µL of sample (N.S and N.B) was loaded onto the disc then placed on the surface of Muller-Hinton medium and the plates were kept for incubation at 37°C for 24 hours. At the end of incubation, inhibition zones were examined around the disc and measured with transparent ruler in millimetres. The size of the zone of inhibition (including disc) was measured in millimeters. The absence of zone inhibition was interpreted as the absence of activity (Kohner *et al.*, 1994; Mathabe *et al.*, 2006). The activities are expressed as resistant, if the zone of inhibition was less than 7 mm, intermediate (8-10 mm) and sensitive if more than 11 mm (Assam *et al.*, 2010).

ANTIFUNGI ASSAY BY DISC DIFFUSION METHOD

(Bauer *et al.*, 1966)

Antibiotic susceptibility tests were determined by agar disc diffusion (Kirby-Bauer) method. Fungi strains *Candida albicans* were swabbed using sterile cotton swabs in SDA agar plate. 10 µL of each sample was respectively introduced in the sterile discs using sterile pipettes. The disc was then placed on the surface of SDA medium and

the compound was allowed to diffuse for 5 minutes and the plates were kept for incubation at 22°C for 48 hours. At the end of incubation, inhibition zones were examined around the disc and measured with transparent ruler in millimeters.

Table 1: Anti-bacterial potential of Hydroalcoholic extract of Sindhu Vallathi Mezhugu (SVM)

Keywords: *PC* Positive control (*Streptomycin*), *NC* Negative control, “-” No Zone, *mm* (Millimetre), *G+* (Gram Positive Organism), *G-* (Gram Negative Organism),

RESULTS

Fig.1 Anti- bacterial potential effect of hydroalcoholic extract of Sindhu Vallathi Mezhugu

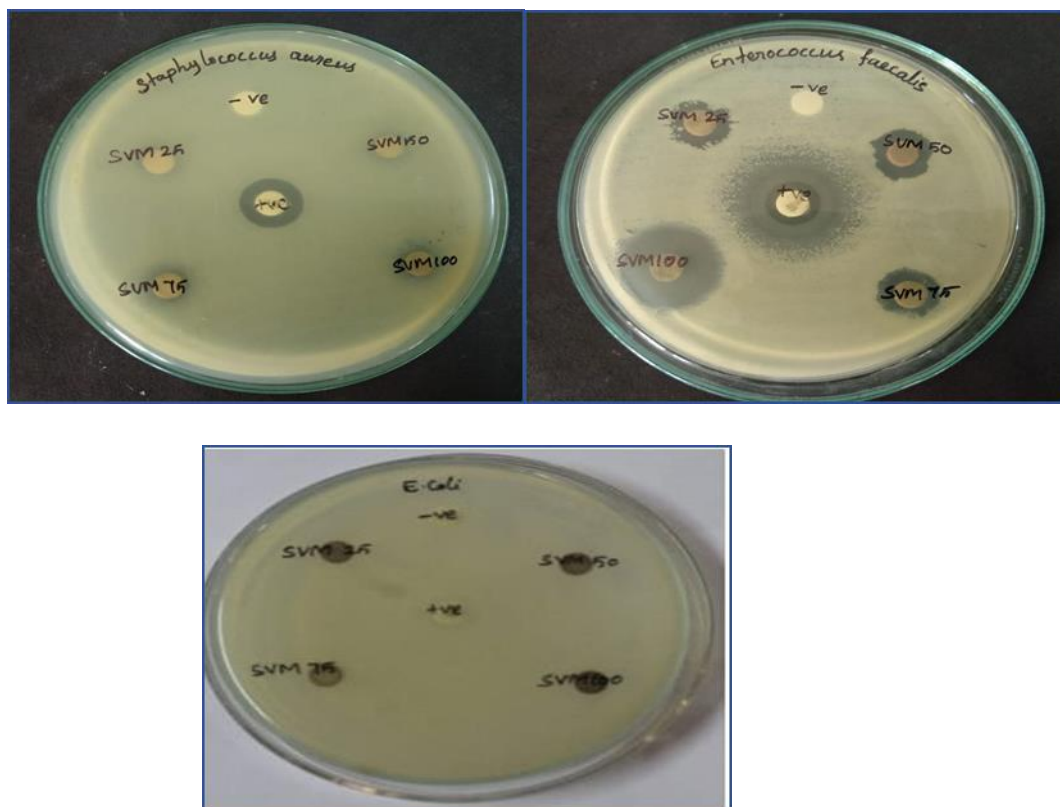


Table 2: Anti-fungal potential of Hydroalcoholic extract of Sindhu Vallathi Mezhugu (SVM)

Fungai Name	Samples					
	Zone of inhibition (mm in diameter)				Positive control	Negative control
SVM 25µl	SVM 50µl	SVM 75µl	SVM 100µl			
<i>Candida albicans</i>	10	14	15	17	19	-

Keywords: *PC* Positive control (*fluconazole*), *NC* Negative control (*ethanol*), “-” No Zone, *mm* (Millimetre).

Fig 2: Anti-fungal potential of Hydroalcoholic extract of Sindhu Vallathi Mezhu (SVM)



CONCLUSION

From the antimicrobial screening it was evident that the Siddha formulation SVM possess significant antimicrobial activity against the tested microbes. Staphylococcus aureus, Enterococcus faecalis, Candida albicans which could be due to the presence of bioactive compounds present in the formulation.

The current research examines the antibacterial & antifungal of traditional Indian medicine in the treatment of a variety of diseases. These activity Siddha formulations could be submitted to further biological and pharmacological studies in order to isolate medicinal components. Antibacterial activity tests on various Siddha formulations have confirmed their medicinal use.

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