



Antimicrobial screening of a siddha formulation Brahmanantha Bairavam Maathirai.

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Abstract

Brahmanantha Bairavammaathirai is a siddha formulation indicated for pyrexia especially in sannisuram. This drug was tested for antimicrobial property against *Proteus vulgaris*, *E.coli*, *Klebsiella pneumoniae*, *Bacillus subtilis*, *Streptococcus mutans* and *Staphylococcus aureus* by agar –disc diffusion method and hence the results of the drug proved that anti- microbial activity against *Staphylococcus aureus* and *Streptococcus mutans*.

Keywords: Siddha formulation, antimicrobial activity, fever, Brahmanantha Bairavam.

Introduction

Pyrexia or fever is the body's way of fighting bacteria and viruses. It is one of the commonest causes of disability, perplexing to medical professionals due to its varied aetiologists and pathophysiologies. It is potent biologic response modifier with consequences that are profound, but difficult to predict. The siddha system of medicine is regarded as the most unique system because of its exclusive materiamedica. Among the 32 external forms of siddha medicine these are many formulations meant for fever associated symptoms, which are time tested, safe and effective. Although they are clinically very effective, scientific evaluation for most of these medicines are lacking. In that way the authors of this research paper have tried to prove the efficacy of "Brahmanantha Bairavammaathirai" through antimicrobial screening.

Materials and Methods

Antibacterial Activity Procedure:

Test Organism:

The test microorganisms used for antimicrobial analysis *Staphylococcus aureus* MTCC737, *Bacillus subtilis* MTCC 441, *Streptococcus mutans* MTCC 890, *Proteus vulgaris* MTCC 426, *Klebsiella pneumonia* MTCC 530, *Escherichia coli* MTCC 443 were purchased from Microbial Type Culture Collection and Gene Bank (MTCC) Chandigarh. The bacterial strains were maintained on Nutrient Agar (NA) and fungi on Sabouraud Dextrose Agar (SDA).

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.

Antimicrobial Test:

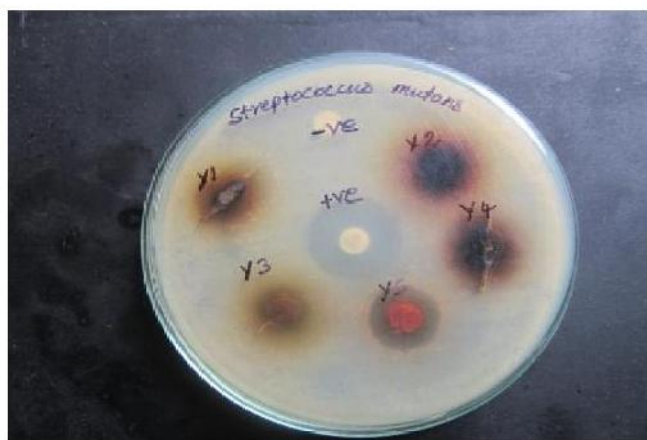
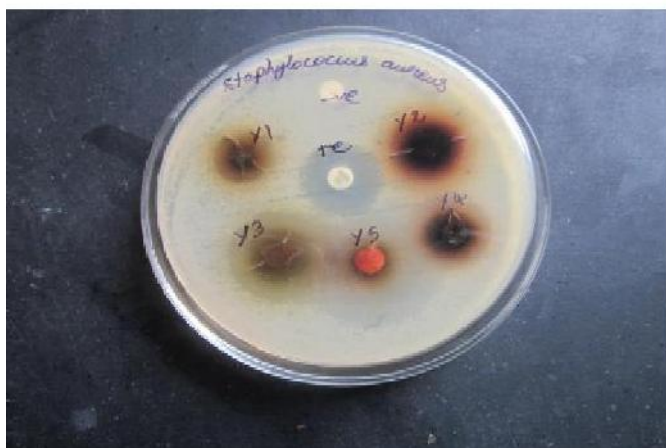
The medium was prepared by dissolving 33.9 g of Muller Hinton Agar Medium (Hi Media) in 1000 ml of distilled water. The dissolved medium was autoclaved at 15 Lbs pressure at 121°C for 15 min (pH 7.3). The autoclaved medium was cooled, mixed well and

poured onto 100 mm petriplates (25 ml/plate) the plates were swabbed with Pathogenic Bacteria culture viz. *S.aureus*, *B. subtilis*, *S. mutans*, *P. vulgaris*, *K. pneumoniae*, *E. coli*. Finally, The Sample or Sample loaded Disc was then placed on the surface of Mullar-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 millimeters. 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).

Results

Antimicrobial sensitivity testing report

S.No	Organisms	Extract(mm)	Positive control Streptomycin(mm)
1	<i>Staphylococcus aureus</i>	24	20
2	<i>Streptococcus mutans</i>	16	22
3	<i>Klebsiella pneumoniae</i>	8	20
4	<i>E.coli</i>	-	20
5	<i>Proteus vulgaris</i>	-	20
6	<i>Bacillus subtilis</i>	-	15



Conclusion

From the available siddha literatures, it is concluded that Brahmanantha Bairavammaathirai is effective

against anti microbial activity. Hence it is effective in treating sannisuram as per siddha text siddha vaithiyathiratu.

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