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Antimicrobial Activity of Herbal Mouth wash – Arowash Liquid

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ABSTRACT: Plants have been used for the treatment of diseases all over the world before the advent of modern clinical drugs and are known to contain substances that can be used for therapeutic purposes or as precursors for the synthesis of useful drugs. Thus over 50% of these modern drugs are of natural products origin and as such these natural products play an important role in drug development in the pharmaceutical industry.

The sensitivity towards the microorganism was increased as concentration is increases. Arowash liquid has (30 - 80 µl) maximum sensitivity towards *Staphylococcus aureus* while it has low sensitivity towards the *Bacillus subtilis*. Arowash liquid has similar effect with the standard drug (Nitrofurazone).

KEY WORDS: Natural Product, Arowash liquid, Microbiological Assay, Zone of Inhibition.

INTRODUCTION

Plants have been used for the treatment of diseases all over the world before the advent of modern clinical drugs and are known to contain substances that can be used for therapeutic purposes or as precursors for the synthesis of useful drugs. Thus over 50% of these modern drugs are of natural products origin and as such these natural products play an important role in drug development in the pharmaceutical industry.

The inhibition of microbial growth under standardized condition may be utilized for demonstrating the therapeutic efficacy of antibiotics. Any suitable change in the antibiotic molecule which may not be detected by chemical methods will be revealed by a change in the antimicrobial activity and hence microbiological assays are very useful for resolving doubts regarding possible change in potency of antibiotics and their preparations.

The microbiological assay is based upon a comparison of the inhibition of growth of micro-organisms by measured concentrations of the antibiotics to be examined with that concentration of the antibiotics to be examined with that produced by known concentrations of a standard preparation of the antibiotics having a know activity[1,2,3,4,5].

EXPERIMENTAL

PREPARATION OF SAMPLE EXTRACT:

30 -80 µl of Arowash liquid was used to evaluate antimicrobial activity.

COMPOSITION OF AROWASH LIQUID:

Each 100 ml of Arowash Liquid contains

Acacia catechu Extract	2.00 gm
Glycyrrhiza glabra Extract	2.00 gm
Syzigium aromaticum Extract	0.30 gm
Glycerin	q.s.
Purified Water up to	100 ml

COMPOSITION OF MEDIUM [1]:

Agar	15 %
Peptic Digest of Animal Tissue	5 %
Sodium chloride	5 %
Bees extract	1.5 %
Yeast extract	1.5 %
Final pH (After Sterilization)	7.5 ± 0.2
Distilled water up to	1000 ml

TEST ORGANISMS:

- *Staphylococcus aureus*
- *Pseudomonas aeruginosa*
- *Bacillus subtilis*
- *E. coli*

METHODOLOGY

Requisite quantity of the liquid agar media was poured in the sterile petridish to give a depth of 3 to 4 mm under the sterile condition. After a solidify the liquid media test organism was spread over the solidified agar media and incubate the petridish at 37° C for 24 hours to grow the microorganism[1].

With the help of the sterile steel rod make a hole on the media and poured the know concentration (30-80µl) test solution in that hole. Repeat the same procedure for the standard drug (Nitrofurazone).

Measured the diameter of zone of inhibition of the both of the test solution as well as the standard antibiotics solution up to 24 hours.

RESULT & DISCUSSION

The results of antibacterial investigations are given in Table 1. Which indicate that different bacterial species exhibited different levels of sensitivities towards the different concentration of Arowash liquid.

The different concentration of Arowash liquid has different sensitivity towards gram positive and gram negative bacteria. The sensitivity towards the microorganism was increased as concentration is increases. Graph 1 shows that Arowash liquid has (30 - 80 µl) maximum sensitivity towards *Staphylococcus aureus* while it has low sensitivity towards the *Bacillus subtilis*.

Arowash liquid shows more effect towards the all the organism tested and has also somewhat similar effect as the standard drug Nitrofurazone.

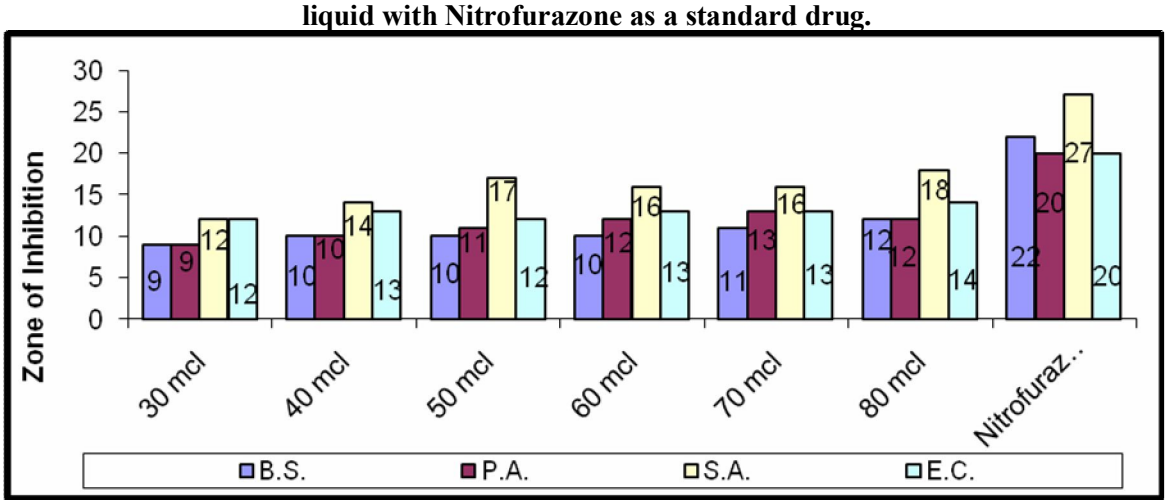
Table: 1 Comparison of zone of inhibition of different concentration Arowash liquid with Nitrofurazone as a standard drug

Sample	Concentration (µl)	Zone of inhibition (mm)			
		B.S.	P.A.	S.A.	E.C.
Arowash liquid	30	9	9	12	12
	40	10	10	14	13
	50	10	11	17	12
	60	10	12	16	13
	70	11	13	16	13
	80	12	13	18	14
Nitrofurazone as standard	500 µg/50 µl	22	20	27	20

B.S. - *Bacillus subtilis* **P.A. –** *Pseudomonas aeruginosa*

S. A. - *Staphylococcus aureus* **E.C. –** *E. coli*

Graph: 1 Comparison of Antimicrobial activity of different concentration of Arowash liquid with Nitrofurazone as a standard drug.



REFERENCES

1. Anonymous, Indian Pharmacopeia, Appendix 9, A-100 – A-124, Government of India, New Delhi, India
2. Darokar M. P, Gupta V K, Fatima A, Antimicrobial potential of *Glycyrrhiza glabra* roots, Journal of Ethno pharmacology, 2008, 116, 377–380.
3. Khan, M.A., Khan, T., Ahmad, Z., Barks used as source of medicine in Madhya Pradesh, India, Fitoterapia 1994, 65(5), 444-446.
4. Brodin P, Roed A., Effects of eugenol on rat phrenic nerve and phrenic nerve-diaphragm preparations. Arch oral Biol., 1984, 29(8), 611-15.
5. Stjepan Pepeljnjak, Antimicrobial activity of juniper berry essential oil, Acta Pharm. 2005, 55, 417–422.

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