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ANTIMICROBIAL SCREENING OF LEAVES OF *Memecylon umbellatum*

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***ABSTRACT*:** The present study includes antimicrobial activity of *Memecylon umbellatum* Alcoholic extract showed maximum antibacterial activity Staphylococcus aureus. (gram positive) and it also showed antibacterial activity against gram negative bacteria and also alcoholic extract alone showed slight antifungal activity.

INTRODUCTION:

Memeccylon umbellatum is an erect tree, herb or shrub, sometimes climbers commonly known as 'Kasa' distributed throughout western peninsular1. Leaves are used as astringent; their lotions used for eye defects and also yield a yellow dye. Fruits are edible and astringent. The bark can be applied to leg for bruises and the root in decotion is useful in excessive menstrual discharge[2-3]. The leaves contain a yellow glycosidal substance umbelatone (4-hydroxy methyl-3- methly-but-2-ene-4,1-oxide) ß – amyrin, sitosterol, glucoside, oleanolic and ursolic acid, tartaric acid and malic acid (1.38%), a resin (6%) and calcium oxalate (1.44%). Fine powder of leaves used as garden soil[4]. Due to the medicinal important of *Memeccylon umbellatum*, the present study deals with morphologic and anatomic features physicochemical constants and phytochemical screening of *Memeccylon umbellatum* leaves.

MATERIALS AND METHODS

The powder of the leaves were subjected to extraction and used for antimicrobial screening. The inoculum, subculture broth and the culture media are prepared as per the directions. The preparation of subculture broth is given in table 1. The preparation of culture media is given in table 2. The organisms like bacteria (Staphylococcus aureus, Bacillus subtilis, Pseudomonas, Escherichia coli) and fungi (Aspergillus niger and Aspergillus flavours) were used. The materials like autoclave, incubator, antibiotic discs, sterilized discs, zone reader, petridishes, nutrient broth and nutrient agar media were used[5].

Disc diffusion method (Filter paper disc) was used for the *invitro* evaluation of antimicrobial activity.20ml of sterilized medium was taken in each petridish. After the medium had hardened, 2ml of 24 hours old broth culture of sub cultured organism were used to seed the plate. It was distributed evenly over the surface of the plate and allowed to set. The sterilized Whatman filter paper no.1discs (6mm diameter) were thoroughly moistened with the extracts and the standard discs of Ciprofloxacin

(10µg/disc) and Amphotericin antibiotic (30µg/disc) were used respectively as standards for bacterial and fungal strains. The plates were incubated at 37^0C for 24 hours (bacteria) and 28^0C for 24 hours (fungal) till perfect growth was observed .The inhibitory zone was measured with the help of an antibiotic zone reader. All the tests were conducted in 3 sets for each sample[6].

RESULTS AND DISCUSSION

The antimicrobial activity of the alcoholic extract towards gram+ve organisms has good potential than the gram-ve organism. The aqeous extract has a moderate antimicrobial activity towards gram-ve organism and has lesser antimicrobial activity towards gram-ve organism. Only alcoholic extract has very slight antifungal activity. The results are shown in the table3.

CONCLUSION

The antimicrobial activity of leaves of *Memecylon umbellatum* on various type of microorganisms are presented. They will serve as a standard data for the quality control preparations.

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TABLE 1: PREPARATION OF SUBCULTURE BROTH

INCREDIENTS	FOR 1000 ml
Yeast	5 gm
Beef extract	10 gm
Peptone	5 gm
Sodium chloride	5 gm
Distilled water	To 1000 ml

TABLE 2: PREPARATION OF THE CULTURE MEDIA

INCREDIENTS	FOR 1000 ml
Beef extract	5 gm
Peptone	5 gm
Sodium chloride	3 gm
Agar	25 gm
Distilled water	To 1000 ml

TABLE 3: ANTIMICROBIAL ACTIVITY OF AQUEOUS AND ALCOHOLIC EXTRACT OF *Memecylon umbellatum.*

Types of micro organisms	Name of micro organisms	Zone of Inhibition			
		Alcohol	Alcoholic Extract	Aqueous Extract	Standard
GRAM POSITIVE	Bacillus subtilis	25 mm	22 mm	16 mm	20 mm
	Staphylococcus aureus	22 mm	19 mm	14 mm	18 mm
GRAM NEGATIVE	Escherichia Coli	20 mm	16 mm	12 mm	16 mm
	Pseudomonas	19 mm	12 mm	11 mm	14 mm
FUNGUS	Aspergillus niger	11 mm	-	-	-
	Aspergillus flavous	10 mm	-	-	-