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Antimicrobial Activity of Seeds of Abrus Precatorius Linn

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Abstract
In vitro studies of seeds of Abrus precatorius Linn were carried out, which includes determination of antimicrobial activity by different methods like cylindrical plate method and turbid metric method. Determination of antibacterial activity by using the following strains of gram positive bacteria (Staphylococcus aureus and Bacillus subtilis) and gram negative (Escherichia coli and Salmonella typhi). In addition to this antifungal activity is also carried out by using the following strains of Candida albicans, Cryptococcus neoformans by using sabourand dextrose broth.

Keywords : - Antimicrobial activity, Abrus precatorius Linn.

The plant Abrus precatorius Linn is a climbing shrub widely distributed in most districts of Andhra Pradesh/Uttarpradesh and M.P. and among bushes on open lands. Among various coloured seed type namely red colooured seeds and white coloured seeds wre selected for this study. The seeds re found to be useful as antibacterial agents[1], anti-inflammatory agents[2], antpyretic agents[3] antineoplastic agents[4], antiallergic agents[5], etc. The present work is done on comparative studies of white and red coloured seeds of Abrus precatorius Linn for antimicrobial activity.

Extraction is carried out by the following procedure. 1 Kg of Coarse powder was extracted with 50% aqueous ethanol in cold maceration method at room temper-ature separately. After filtration the marc was extracted twice in the same condition. Ethanol was removed under vacuum and the aqueous residue was lyophilized to dry the txract. Extracts were fractioned in petroleum ether, chloroform and methanol. The crude (50 % ethanolic extract of red form and white form) and methanol soluble and insoluble fractions of crude (red form and white form) were stored in desiccators and used. The crude

(50 % ethanolic extract of red form and white form) and methanolo soluble and insoluble fractions of crude (red form and white form) were used for the study of antimicrobial activity. The seed powders of both forms were studied with different chemical reagents. The fluorescence properties of the various extracts were studied both in day light and ultraviolet light. The following methods were employed to assess the antimicrobial activity of the extract and fraction. (1) Cylindrical plate method or cup plate method (2) Turbidimetric method or two fold serial dilution method. The strains of Staphylococcus aureus, Bacillus sutillis and Escherichia coli wre obtained from aNational Chemical KGMC Medical College, Lucknow typhi was obtained dromm Calicut Medical College, Kerala and strains of Candida albicans, Cryptococcus neoformans were obtaind from KGMC Medical College, Lucknow and inoculated in conical flask containg 100 ml. Sterile nutrient broth. These conical flask were incubated at 37 ^{0}C for 24 h. This has been referred to as seeded broth Ampicillin trihydratee was takep as the standard from for estimating antibacterial activity and amphotericin –B was taken as the standard for antifungal activity. The concentration of the drug used was 100 ug/ml.

TABLE-1

ANTIBACTERIAL ACTIVITY OF THE CRUDE AND ITS FRACTIONS OF RED AND WHITE FORMS OF Abrus precatorius Linn SEEDS

Name of the drug		Zone of inhibition (mm)			
		Gram positive bacteria		Gram negative Bacterial	
		S. aureus	B. subtilis	E. coli	S. typhi
Dimethyl sulphoxide (solvent		0	0	2.0	0.0
Ampicillin trihydrate (Standard)		25	24	23.5	20.2
Crude	Red form	19	16	0	0
	White form	23	20	0	0
Methanol soluble	Red form	16	14	0	0
Fraction of crude	White form	17	18	0	0
Methanol Insoluble	Red form	14	12	0	0
Fraction of crude	White form	18	16	0	0

TABLE-2

ANTIFUNGAL ACTIVITY OF THE CRUDE AND ITS FRACTIONS OF RED AND WHITE FORRM OF Abrus pracatorius Linn SEEDS

Name of the drug		Zone of inhibition (mm)	
		Candida albicans	Cryptococcus neoformans
Dimethyl sulphoxide (solvent		0	0
Amphotericin-B (Standart)		23	24
Crude	Red form	19	18
	White form	21	17
Methanol soluble	Red form	14	0
Fraction of crude	White form	19	14
Methanol Insoluble	Red form	0	0
Fraction of crude	White form	13	12

In the pharmacological study, the antibacterial activity of white form against gram positive microorganism was significantly greater than red form. Though methanol soluble ad insoluble fractions exhibited moderate activity against gram positive bacteri, it has no effect against gram negative bacteria. Like antibacterial activity, antifungal activity indicated that the crude extract of white form significantly affected fungal growth than red form although fraction of both forms showed moderate activity.

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