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NOTE

Antimicrobial Activity of Seeds of *Abrus precatorius* Linn

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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 turbidimetric 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.

Key Words: Antimicrobial activity, *Abrus precatorius* Linn.

The plant *Abrus precatorius* Linn is a climbing shrub widely distributed in most districts of Andhra Pradesh and Karnataka in hedges and among bushes on open lands. Among various coloured seeds type namely red coloured seeds and white coloured seeds were selected for this study. The seeds are found to be useful as antibacterial agents[1], antiinflammatory 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 temperature 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 extract. 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 methanol soluble and insoluble fractions of crude (red form and white form) were used for the study of antimicrobial actvity. The seed powders of both forms were studied with different chemical reagents. The fluorescence properties of the various extracts

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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 subtilis* and *Escherichia coli* were obtained from National Chemical Laboratory, Pune and *Salmonella typhi* was obtained from Calicut Medical College, Kerala and strains of *Candida albicans*, *Cryptococcus neoformans* were obtained from Medical College, Anantapur and inoculated in conical flasks containing 100 mL sterile nutrient broth. These conical flasks were incubated at 37 ºC for 24 h. This has been referred to as seeded broth. Ampicillin trihydrate was taken 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 µg/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 bacteria	
		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 fraction of crude	Red form	16	14	0	0
	White form	17	18	0	0
Methanol insoluble fraction of crude	Red form	14	12	0	0
	White form	18	16	0	0

TABLE-2
ANTIFUNGAL ACTIVITY OF THE CRUDE AND ITS FRACTIONS OF RED AND WHITE FORM OF *Abrus precatorius* Linn SEEDS

Name of the drug		Zone of inhibition (mm)	
		Candida albicans	*Cryptococcus neoformans*
Dimethyl sulphoxide (solvent		0	0
Amphotericin-B (standard)		23	24
Crude	Red form	19	18
	White form	21	17
Methanol soluble fraction of crude	Red form	14	0
	White form	19	14
Methanol insoluble fraction of crude	Red form	0	0
	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 and insoluble fractions exhibited moderate activity against gram positive bacteria, it had no effect against gram negative bacteria. Like antibacterial activity, antifungal actvity indicated that the crude extract of white form significantly affected fungal growth than red form although fractions of both forms showed moderate activity.

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