

STUDIES ON ANTIMICROBIAL PROPERTY OF HERBAL PLANTS

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Abstract

Antibiotics resistant development is the major hurdle in treatment of infectious diseases. To fight antibiotic resistance problems, various strategies were advocated. To use multiple actions drug in combination is one of the major strategy to fight against the antibiotic resistance problem. In this investigation we tried to find out compatible ayurvedic preparations i.e. Guggul, Kuchla, Manjistha, Ashwagandha were selected for to observed there antimicrobial potential. The plant's parts were extracted with polar and non-polar solvent i.e. water, ethanol, ethyl acetate, chloroform and hexane. The prepared extract were tested against the representative of Gram negative, positive and some fungi out of the different extract of all plants, only ethanol extract showed the best solvent for extraction of antimicrobial potential. Similarly it was observed that comparatively Manjishtha have high potential against the fungi and bacteria. Besides that the ethanol extract of Kuchla also showed comparable antimicrobial potential, besides that Ashwagandha also showed comparable antifungal activity. For Manjishtha extract we also tested it's antibacterial and antifungal potential with combination other antibiotics. It was observed that there was enhancement of microbial activity, take place. It was primarily indicate that Manjishtha is compatible with same antibiotics for preparation of new drug designing against the antibiotics resistance problem.



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Plants : systematic Division

1] ashwagandha



[L. Name : Withania Somnifera]

Parts used : Roots

Ras : Tikta, Katu, Madhura

Guna : Laghu, Snigdha

Veerya : Ushna

Vipak : Madhura

Dose : 3 to 6 gms

Significance : Roots : Nervine disorders , Shothtara, Insomnia, Vedanasthapak, strengthen nerves Nervine tonic, balya

[Database on Medicinal plants used in Ayurveda Vol . 2]

2] Manjishtha



[L. Name : Rubia Cordifolia]

Parts used : Roots

Ras: Madhura, Tikta, Kashaya

Guna : Guru

Veerya : Ushna

Vipak : Madhura

Significance : Roots : blood purifier, Tonic sheshmahara, Shothahara, Antidysentric, klednashak, Antiseptic

[Trease and Evans : Author : W. C. Evens]

[Bhavprakash nighantu page no. 90]

3]Guggulu



[L. Name

Ras : Tikta, Katu

Guna : Laghu, Ruksha

Veerya : Ushna

Vipak : Katu

Partts used : Nirryasa

Significance : Nervine tonic, antispasmodic, painkiller, antiinflammatory, antihelmenthic, antiviral

[Bhavprakash nighantu page no. 70]

4] Kuchla



[L. Name : Nux Vomica]

Ras : Tikta, Katu

Guna : Ruksha, Laghu, Tikshna

Veerya : Ushna

Vipak : Katu

Parts used : Seeds

Significance : Antiinflammatory, stimulant to nerve, painkiller, antiseptic

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Result :

Antimicrobial activity

Plant Parts Soxhlet extraction [Ether] Extract Bioassay

Ethanol Extract	E.Coli [Zone mm]	Bacillus subtilis	S. Aureus Zone mm	Aniger [Zone mm]	Furium fesarium oxysporium
Guggulu	10	12	13	10	8
Kuchla	-	-	8m	11	12
Manjishtha	13	12	10	12	11
Ashwagandha	-	8m	8m	10	10

Control – Ethanol – 95% Zone 3.5mm – detected zone – zone of inhibition of bacteria

Conclusion : The tested plant extract showed antimicrobial polexha Withania Somnifera showed potent effect against Bacteria.