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Antibacterial Activity of some Fresh Water Algae

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ABSTRACT: Present deals with the study of antibacterial activity of some fresh water algae against some bacteria. It was found that some fresh water algae showed antibacterial activity.

Key words: Algal extract, Bacteria, Antibacterial activity, Fresh algae

Introduction

Algae are the very important and diverse group of plant kingdom, being many bioactive compounds algae becoming good area for research. Algae have many useful constituents like agar agar, protein, mineral, fat, fibre, cholesterol, etc. but satisfactory work is not carried out belonging to antibacterial property by using algal extract, so this research is carried out.

Materials and Methods

Ten different algae like *Chara grovesii Cladophora callicoma, Hydrodictyon reticulatum, Nitella batrachosperma, Schizomeries leibleinii, spirogyra plena, Phormidium corium, Plectonema gracillimum, Scytonema coactile and Spirulina platensis* were collected from different localities of Marathwada region of Maharashtra and algal extract was made in hot water. Nutrient agar medium was used for antibacterial bioassay; the pH of medium was between 7.2 to 7.4 after equilibration at room temperature. The freshly prepared and cooled medium was poured into clean autoclaved plates as a level horizontal surface so as to give a uniform depth of approximately 4mm. after the medium had been allowed to cool at room temperature, the Petri plates were stored in refrigerator between 2 to 8^0C until used. Just before use, the plates were placed in an incubator (37^0C) for one hour until excess surface moisture on the surface of the medium or on the Petri plates cover was lost by evaporation. Inoculation of test plates was done by using testing bacterial culture; the entire surface of plate was uniformly inoculated. The two cm. paper discs were prepared from Whatman filter paper No.42 discs were soaked in extract for five minutes. The discs were placed in the center of Petri dish and incubated for 24 hours at 37^0C and examined the zone on the plate, and the diameter of the zone was recorded.

Results and Discussion

Table 1. Antagonistic zone (mm) of hot water algal extract against different bacteria

Name of algae	*Pseudomonas aruginosa*	*Eschericha coli*	*Staphylococus albus*	*Salmonella typhi*	*Bacillus megaterium*
Chara grovesii	-	-	-	-	-
Cladophora Callicoma	-	15	09	-	-
Hydrodictyon reticulatum	-	-	09	-	-
Nitella batrachosperma	-	17	-	-	08
Schizomeris leibleinii	12	09	13	10	-
Spirogyra plena	11	13	12	13	09
Phormidium corium	-	-	14	-	-
Plectonema gracillimum	-	23	08	09	-
Scytonema coactile	08	13		09	10
Spirulina platensis	13	11	11	12	-

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It is clearly indicated from table 1 that the extract of *Chara grovesii* was found to be antagonistic to all bacteria spp. The growth of *Pseudomonas ruginosa* was inhibited by *Cladophora callicoma, Hydrodicyion reticulatum, Nitella batrachosperma, Phormidium corium* and *Plectonema gracillimim.* Similarly *E. coli* growth was inhibited by *Hydrodictyon reticulatum, Phormidium corium, Staphylococus aibus* inhibit in *Nitella batrachosperma,* where as *Cladophora callicoma, Hydrodictyon reticulatum* and *Phormidium corium* retard sthe growth of *Salmonella typhi* and *Bacillus megaterium* In 1989 Bernard and Pesando revealed the antibacterial property of rhizomes of the Medeterian seagrasses, Reichelt *et.al* (1984) recorded antimicrobial properties of marine algae, Zheng *et.al* (2001) screened antibacterial and antifungal activity in some marine algae from the Fujion coasts of China, Compos *et.al* (1988) screened marine algae from Northeastern coast for antimicrobial activity.

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References

Bernard, P. and D. Pesando 1989 Antibacterial and antifungal activity of extracts from the Rhizomes of the Mediterranean seagrass posidonia. Oceanica (L) Delile. Botanica Marine Vol.32: 85-88,

Campos, G.M.,de-Takaki,M.B.S. Diu, M.L. Koening and E.C. Pereira 1988 Screening of marine algal from Brazilian Northeastern coast Batanica, Marina, Vol. 31, pp. 375-377.

Reichelt,J.L. and M.A. Borowitzka 1984 Antimicrobial activity from marine algae: results of large scale screening programme, In proceedings of the Eleventh International seaweed symposium, Qindao, People's Republic of China, June 19-25, 158-168, Hydrobiologia, 116-117, 158-167, 1984.

Zheng, Y., Chen, Y.S., Luhai,Sheng 2001 Screening for antibacterial and antifungal activity in some marine algae from the Fujion coast of china with three different solvent. Chinese J. of Oceanology and Limniology, 19(4):327-31.