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(14 ) *Nostoc*  
Vauch. ex Born. et Flah., *Lyngbya* Ag., *Mougeotia* Ag. *Pithophora* Witt.

13 , - 11, - 5 - 8 :  
*Ulothrix* Kütz. (5,6 / ), -  
*Tolypothrix* Vauch. ex Born. et Flah. (0,5 / ). *b*  
*Vaucheria* DC (4,2 / ), - *Cylindrospermum* Vauch. ex Born. et Flah. (0,6 / ).  
*Ulothrix* (5,6 / ), - *Tolypothrix*  
*Oscillatoria* Vauch. ex Gom. (0,6 / ). 4-20 %  
*Cylindrospermum* (20 %) *Hydrodictyon* Roth (4 %).  
14-35 % *Mougeotia* (35 %) *Tolypothrix* (14 %).

(Roslin, 2003).

(Pratt et al., 1944).

(Bukholder et al., 1960).

(Parameswaran et al., 1944;

Patterson, 1968).

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(Jaki et al., 2000),

(Borowitzka, Borowitzka, 1989).

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60 °

(Akinyemi et al., 2000).

40

(*Bacillus subtilis*, *B. cereus*)  
(*Enterobacteria aerogenes*, *Salmonella typhimurium*, *Escherichia coli*, *Pseudomonas aeruginosa*)  
MTCC

4 °

(Desta, 2005).

1-2 10 /

(8 )

50 /

37 ° . 24

( )

(Gibbs, 1974).

(Arnon, 1949),

(Lowry et al., 1951),

(Jermyn, 1975).

3-

*Cylindrospermum*, *Oscillatoria* *Tolypothrix* *Melosira*, *Microspora*,  
 (14 ) *Nostoc*,  
*Pithophora*, *Mougeotia* *Lyngbya*.

100  
 10 % (Cannell et al., 1988).  
 50 %

*Nostoc*  
*Bacillus subtilis*, *B. cereus* *Escherichia coli*.  
*Nostoc*  
*Staphylococcus aureus* *Pseudomonas aeruginosa* (Kamenarskaya et al., 2000).  
*Spirogyra*,  
*Mougeotia* *Lyngbya*,  
 (Cannell et al., 1988;  
 Berry et al., 2004).

*E. coli* *P. aeruginosa* - *B. subtilis*,  
 -  
 -  
 -  
 -  
 -  
*B. subtilis* *B. cereus* -  
 18 17 -

( 14 )  
 -  
 : > > ( . ),  
 (Hodgson, 1984; Vijaya et al., 2004).

, 11 - , 13 , 5 - , 8 -  
 23

*Pithophora Dismidium* 4  
 5, *Microspora, Oedogonium, Chaetophora Anabaena –*  
*Microchaete, Nitella, Sphaeroplea,*  
 . . . . . (Glombitza et al., 1997)  
 (Patterson,  
 1968), (Gibbons et al., 1967) (Reitz, Hamilton, 1968).  
 , , ,  
*Ulothrix* (5,6 / ),  
 – *Scopulonema, Pithophra, Oedogonium* (3,9 / ), –  
*Tolypothrix* (0,5 / ). *b Vaucheria*  
 (4,2 / ), – *Desmidium* (3,2 / ) *Pithophra* (2,9 / ) –  
*Cylindrospermum* (0,6 / ).  
*Ulothrix* (5,6 / ),  
 – *Melosira* (3,5 / ) *Mougeotia* (3,1 / ), – *Tolypothrix*  
*Oscillatoria* (0,6 / ) ( . ). -  
 , , , ,  
 , , , ,  
 . (Emodi, 1978).  
 14-35 %  
*Mougeotia* (35 %), *Anabaena* (34 %), *Lyngbya, Microcoleus* (31 %) ,  
*Tolypothrix* (14 %). ,  
 1,4 59 % (Roslin, 2003b).  
 4-20 %  
*Cylindrospermum* (20 %) *Hydrodictyon* Roth (4 %).  
*Phormidium* (19 %), *Melosira*  
*Cladophora* (17 %) ( . ).  
 (1,5-24,8 %) (Roslin, 2003 ).  
*Anabaena Nostoc* , , ,  
 , , ,  
 (Jeraci, Vansoest, 1986).

Ta	( )																	
	B.s.			B.c.			E.a.			S.t.			E.c.			P.a		
	M	E	A	M	E	A	M	E	A	M	E	A	M	E	A	M	E	A
<i>Oedogonium</i> Link.	5	4	3	5	5	4	5	-	3	4	4	3	-	-	4	7	-	3
<i>Nostoc</i> Vauch. ex Born. et Flah.	14	8	5	12	9	5	9	6	4	7	4	5	13	-8	6	10	-8	4
<i>Enteromorpha</i> Link.	5	4	-	5	-	-	5	-	-	3	5	-	-	-	-	5	-	-
<i>Hydrodictyon</i> Roth	7	4	-	8	5	-	-	-	-	-	5	-	-	-	-	-	-	-
<i>Ulothrix</i> Kütz.	9	5	-	7	3	-	-	-	-	-	6	-	-	3	-	-	-	-
<i>Vaucheria</i> DC	10	4	-	6	3	-	10	-	-	5	4	-	7	4	-	6	-	-
<i>Spirogyra</i> Link.	4	-	-	7	-	-	7	-	-	5	-	-	6	-	-	7	-	-
<i>Scopulonema</i> Racib	7	4	4	7	5	6	7	4	4	10	4	6	-	-	-	7	4	4
<i>Pithophora</i> Wittr.	14	5	-	5	5	-	10	-	-	6	5	-	12	4	-	11	3	3
<i>Lyngbya</i> Ag.	14	8	3	12	7	4	6	4	3	7	5	3	10	6	3	9	6	3
<i>Anabaena</i> Bory	6	-	3	6	4	3	4	4	-	7	3	3	10	-	-	7	-	-
<i>Microcoleus</i> Desm. ex Gom.	7	3	-	8	5	-	-	4	-	7	5	-	5	-	-	4	6	-
<i>Mougeotia</i> Ag.	14	12	4	14	10	3	9	5	3	9	5	3	10	7	3	8	6	3
<i>Desmidium</i> Ag. ex Ralfs	7	3	4	6	4	3	4	7	3	10	7	3	7	5	3	5	3	-
<i>Phormidium</i> Kütz.	5	5	-	5	-	-	-	-	-	-	-	-	4	3	-	-	-	-
<i>Tribonema</i> Derb. et Sol.	5	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-
<i>Chaetophora</i> Schrank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cladophora</i> Kütz.	5	-	-	3	-	-	4	-	-	-	-	-	-	-	-	-	-	-
<i>Microcoleus</i> Desm. ex Gom.	4	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tolypothrix</i> Kütz. ex Born. et Flah.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Oscillatoria</i> Vauch. ex Gom.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Cylindrospermum</i> Kütz. ex Born. et Flah.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Microspora</i> Thur.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Melosira</i> Ag.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

									(%)
	( / )								
	T <sub>t</sub>	P <sub>t</sub>	St <sub>t</sub>	F <sub>t</sub>	Sa <sub>t</sub>	Chl. a	Chl. b	Car	
<i>Oedogonium</i> Link.	-	-	-	-	+	3.9	2.1	2.1	13
<i>Nostoc</i> Vauch. ex Born. et Flah.	-	-	-	+	+	2.2	1.3	2.2	5
<i>Enteromorpha</i> Link.	+	-	-	-	-	2.5	2.0	2.5	14
<i>Hydrodictyon</i> Roth	+	+	-	-	-	1.9	1.3	1.7	4
<i>Ulothrix</i> Kütz.	+	+	-	-	-	5.6	3.1	4.5	10
<i>Vaucheria</i> DC	+	-	+	-	+	3.7	4.2	2.8	6
<i>Spirogyra</i> Link.	+	+	-	-	+	2.1	1.4	1.9	11
<i>Scopulonema</i> Racib	+	-	+	-	-	3.9	2.8	2.9	11
<i>Pithophora</i> Wittr.	+	+	+	-	+	3.9	2.9	2.8	9
<i>Lyngbya</i> Ag.	-	-	+	+	+	1.0	1.3	1.2	8
<i>Anabaena</i> Bory	-	+	-	-	-	3.2	2.5	2.8	11
<i>Microcoleus</i> Desm. ex Gom.	+	-	+	-	-	2.8	2.5	2.3	13
<i>Mougeotia</i> Ag.	-	-	+	-	+	3.5	2.9	3.1	9
<i>Desmidium</i> Ag. ex Ralfs	+	+	+	+	-	3.8	3.2	2.7	10
<i>Phormidium</i> Kütz.	-	-	+	+	-	1.8	1.4	1.5	19
<i>Tribonema</i> Derb. et Sol.	-	+	-	+	+	2.2	1.3	1.5	15
<i>Chaetophora</i> Schrank	+	-	-	-	-	1.9	1.4	1.8	15
<i>Cladophora</i> Kütz.	+	-	-	-	-	1.8	1.2	1.6	17
<i>Microcoleus</i> Desm. ex Gom.	+	+	-	-	-	1.8	1.6	1.4	15
<i>Tolypothrix</i> Kütz. ex Born. et Flah.	-	+	+	-	-	0.5	2.1	0.6	15
<i>Oscillatoria</i> Vauch. ex Gom.	-	+	+	-	-	0.6	0.8	0.6	15
<i>Cylindrospermum</i> Kütz. ex Born. et Flah.	+	+	-	-	-	0.7	0.6	1.2	20
<i>Microspora</i> Thur.	-	+	-	-	-	2.1	1.3	2.5	15
<i>Melosira</i> Ag.	-	+	+	-	-	1.8	2.1	3.5	17

B.s. – *Bacillus subtilis*; B.c. – *B. cerius*; E.a. – *Enterobacteria aerogens*; S.t. – *Salmonella typhimurium*; E.c. – *Escherichia coli*; P.a. – *Pseudomonas aeruginosa*; M – ; E – ; A – ; T<sub>t</sub> – - ; P<sub>t</sub> – - ; St<sub>t</sub> – - ; F<sub>t</sub> – ; Sa<sub>t</sub> – - ; Car – ; «+» – ; «-» – .

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ANTIBACTERIAL ACTIVITY AND BIOMOLECULAR COMPOSITION OF CERTAIN FRESH  
WATER MICROALGAE COLLECTED FROM RIVER GODAVARI (INDIA)

The microalgae are of significant attraction as natural source of bioactive molecules. Twenty four different fresh water algal species were screened for their antibacterial activity and biomolecules. Bactericidal activity was tested against two gram+ve and four gram-ve bacteria. Maximum antibacterial activity was observed in methanol extracts and least in aqueous extracts. Maximum activity (14 mm) was observed in the extracts of *Nostoc*, *Lyngbya*, *Mougeotia* and *Pithophora* sp. Gram-positive bacteria were more susceptible than gram-negative bacteria. Thirteen algal species are associated with tannins and phenols, 11 species with steroids, 5 species with flavonoids and 8 species with saponins. Maximum chlorophyll *a* was recorded with *Ulothrix* (5.6 mg/g) and least in *Tolypothrix* (0.5 mg/g). Chlorophyll *b* was recorded maximum in *Vaucheria* (4.2 mg/g) and least in *Cylindrospermum* (0.6 mg/g). Maximum carotenoid content is recorded in *Ulothrix* (4.5 mg/g) and least in *Tolypothrix* and *Oscillatoria* (0.6 mg/g). Range of protein content is 4-20 % with maximum yield in *Cylindrospermum* sp. (20 %) and least in *Hydrodictyon* (4 %). Carbohydrate content ranged from 14-35 % with maximum yield in *Mougeotia* (35 %) and least in *Tolypothrix* (14 %). Their pharmacological activities and bioactive molecules can be highly exploited .

*Key words* : fresh water algae, antibacterial activity, phytochemicals, phycopigments.

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