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Characterization of cyanobacteria against Gram-positive and Gram-negative bacteria

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Cyanobacteria are a very old group of organisms and represents relics of the oldest photoautotrophic vegetation in the world that occur in freshwater, marine and terrestrial habitats. Cyanobacteria from local habitats seem to be source of potential active substances that could contribute to reduction of the number of bacteria, fungi, viruses and other microorganisms. Recently, compounds from cyanobacteria have been isolated which display inhibitory effects on bacterial growth, on Mycobacterium spp., on fungal growth, on cancer cells, against viruses and enzymes. In the current study, antibacterial activity of different organic extracts prepared from biomass (intracellular) and culture supernatant (extracellular) of laboratory-grown were studied against some Gram-positive and Gram-negative bacteria. Cyanobacteria species viz., Anabaena variabilis, Anabaena fertilissima, Nostoc muscorum, Nostoc punctiforme, Nostoc linckia, Nostoc commune, Spirulina platensis, Westeillopsis prolifica and Hapalosiphon sp. were screened against Staphylococcus aureus, Escherichia coli, *Pseudomonas* aeruginosa, Klebsiella pneumoniae and Salmonella typhi. Antibacterial activity of extracts varied with the test organisms analyzed. Maximum antibacterial activity was shown against Staphylococcus aureus, followed by Escherichia coli, *Pseudomonas* aeruginosa and Salmonella typhi. Klebsiella pneumoniae was found to be least susceptible against all tested cyanobacterial extracts. The results obtained from the present study indicate development of antimicrobial substances from different cyanobacterial extracts and their promising utilization in treatment of various infectious diseases.

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