



Study of antibiotic activities of some actinomycetes

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Antibiotics are the secondary metabolites that are produced in low concentration by one type of microorganisms that selectively inhibit or kill other microorganisms. The actinomycetes are good antibiotic producers. The ability of these microorganisms to produce useful antibiotics has focused attention on their isolation from their natural habitat, the soil.

*The present investigation to isolate and study the antibiotic activities of actinomycetes against the specified bacterial strains was done by serially diluting the soil sample collected from the campus of Patna Women's College and plating it on the Casein Starch Peptone Yeast Malt Extract (CSPY-ME) medium. Among the isolates, five strains of actinomycetes were selected and were subjected to primary screening by perpendicular streak method against Gram-positive (*Staphylococcus aureus*) and Gram-negative (*Pseudomonas spp.*, and *Shigella flexneri*) bacteria, obtained from the Department of Industrial Microbiology of Patna Women's College. The actinomycetes were subjected to secondary screening by agar well method to further test their strength and spectrum of the antibiotic properties against the specified bacterial strains. The results of screening revealed that majority of the selected actinomycetes were active against Gram positive bacteria. The reason for different sensitivity between Gram positive and Gram negative bacteria could be ascribed to the morphological differences between these microorganisms. The Gram negative bacteria have an outer polysaccharide membrane carrying the structural lipopolysaccharide components.*

Keywords : Antibiotics, actinomycetes, bacteria.
