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Isolation of indigenous actinomycetes and screening of their antibacterial and antifungal Activity

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Abstract : *The present study aimed at isolating indigenous strains of actinomycetes from soil sample collected in Patna region and screening of the isolates for their antibacterial and antifungal activity against seven pathogenic test bacterial and fungal genera. A total of sixteen strains were investigated for their morphological and cultural characteristics and antimicrobial activity. Upon initial identification all the isolated strains were found to belong to Genera Streptomyces. Out of sixteen strains, tested, only five showed antibacterial activity and four strains exhibited antifungal inhibition potential. One strain (Strain No. 14) exhibited inhibition potential against gram-positive, gram-negative bacteria and also against mold. However, strain no. 2, 13 and 15 exhibited activity only against the Gram negative strains i.e., Pseudomonas sp, Shigella sp and Serratia sp, while strain no. 9 only against Gram positive bacteria (both S. aureus and B. subtilis). Further investigations are needed to identify the strains to species level and also to check whether the metabolites responsible for these antimicrobial activity are active substances or not.*

Key Words : *Streptomyces, antimicrobial activity, antibiotic susceptibility, bioactive compound, characterization.*

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Introduction :

Actinomycetes have provided important bioactive compounds of high commercial value and continue to be routinely screened for new bioactive substances. These searches have been remarkably successful and approximately two-thirds of naturally occurring antibiotics, including many of medical importance, have been isolated from actinomycetes (Okami and Hotta 1988). Actinomycetes are abundant in terrestrial soils, a source of the majority of isolates shown to produce a number of bioactive compounds. The result of intensive screening program carried out over the