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Marine actinomycetes a reservoir of novel bioactive molecules antagonistic to urinary tract bacterial pathogens

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The development of multi drug resistant uropathogens is a big threat to human race. Infections with multidrug-resistant bacteria are hard to treat. The present study is the Characterization of bioactive compounds from marine actinomycetes antagonistic to urinary tract bacterial pathogens. This aims to prove marine actinomycetes have some bioactive compounds which are antagonistic to multi drug resistant uropathogens. In this study 14 different urine samples were collected from UTI suspected patients and isolated five uropathogens from it. 50 marine actinomycetes were isolated from various marine samples collected from different stations of Vizhinjam coastal region, part of Arabian Sea on the western coast of India. The isolated colonies were studied on their morphological characteristics. These diverse colonies were observed and indicated that the potential diversity of the actinomycetes isolated from various sources. The antagonistic activity studies showed that among the 35 marine actinomycetes isolates 9 isolates showed significant antagonism against all the five test organisms Escherichia coli, Klebsiella sp., Pseudomonas sp., Enterococcus sp., Proteus sp. in primary screening. The isolate VZ9 showed maximum inhibitory activity against Escherichia coli (18mm). The result was consistent on both well diffusion and disc diffusion methods. Similarly VZ4 showed maximum activity against Klebsiella sp. VZ35 showed maximum activity against Pseudomonas sp. in well diffusion assay. But in disc diffusion method VZ2 is the most potent strain against Pseudomonas sp. Against Enterococcus sp. VZ9 showed the highest antagonistic activity in both the secondary assays followed by VZ2. VZ4 is the most potent isolate against Proteus sp. in both disc and well diffusion methods. From this study it is evident that the marine actinomycetes are a potential source of bioactive secondary metabolites which can be used to address the ever increasing drug resistance in the clinical scenario.

Speaker Biography

Deepa Mathew P was completed her post-graduation at the age of 22 years from Bharathiar University and bachelor's degree from Mahatma Gandhi university, Kottayam. She has published 4 papers in reputed journals. Now she is doing her Phd in microbiology from Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India.

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