Molecular identification and structural characterization of marine endophytic actinomycetes Nocardiopsis sp. GRG 2 (KT 235641) and its antibacterial efficacy against isolated ESBL producing bacteria

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The present study was designed to identify the potential bioactive compound from endophytic actinomycetes (EA) Nocardiopsis sp. GRG 2 (KT 235641) against selected extended spectrum beta lactamase (ESBL) producing Pseudomonas aeruginosa (P. aeruginosa) and Klebsiella pneumoniae (K. pneumoniae). Initially, the multi drug resistance (MDR) effect of selected uropathogens was confirmed by respective UTI panel of Hexa antibiotics disc methods. The zone of inhibition ?22 mm for ceftazidime, ? 27 mm for cefotaxime and ?8 mm zone of MIC stripe against both the uropathogens of phenotypic methods confirmed, the selected strains were ESBL producer. Among the various EA extracts, GRG 2 extract showed excellent antibacterial activity against both ESBL producing P. aeruginosa and K. pneumonia by agar well diffution method. The molecular identification of selected GRG 2 strain was named as Nocardiopsis sp. GRG 2 (KT235641). The antibacterial metabolites present in the TLC elution wa