

ABSTRACT

Microbial pathogens are acquiring resistance against accessible antibiotics, stressing the need of the discovery of novel curative compounds. Actinomycetes, on your own bring into being 70-80% of the accessible antibiotics. Unusual genera of actinomycetes can be selectively isolated by means of a variety of physical and chemical pre-treatment methodologies. Primary and secondary screening of isolates was performed for determining their antimicrobial prospective both qualitatively and quantitatively. The main objectives of the current study were isolation, purification, and characterization of *Streptomyces* isolated from soil samples, having antagonistic activity against 13 elected pathogenic strains. Soils samples were taken from different niche habitats of Changa Manga forest, near Changa Manga Railway Station, Kasur, Punjab, Pakistan. These samples were serially diluted and plated on actinomycete isolation agar media. Potential colonies were screened, purified, and stored in glycerol stock. Isolates were morphologically and biochemically characterized. These isolates were subjected to extraction for production of the antibacterial compound. Antibacterial activity of the purified extract of isolates was evaluated. Totally 19 *Streptomyces* isolates were tested for antagonistic activity against 13 pathogenic microorganisms. Isolates ISL-1, ISL-3, ISL-6, ISL-7, ISL-8, ISL-10, ISL-12, ISL-14, ISL-15, and ISL-16 were highly active against the pathogenic microorganisms. Isolate ISL-10 exhibited the highest antagonistic activity against MRSA (19 mm) and ISL-7 showed the highest activity against *Klebsiella* (18 mm). All *Streptomyces* isolates showed antibacterial activity against MRSA. These isolates had antibacterial activity and could be used in the development of novel antibiotics for pharmaceutical or agricultural purposes.