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Antimicrobial investigation of selected soil actinomycetes isolated from unexplored regions of Kashmir Himalayas, India

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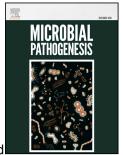
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- 18 Abstract

The aim of the present study was to isolate and evaluate the antimicrobial potential of soil 19 actinomycetes of Kashmir Himalayas. The secondary metabolites of actinomycetes are the 20 prominent source of antibiotics. A total of 121 morphologically different actinomycete strains 21 22 were isolated and screened for antimicrobial activity against various human pathogens. The ethyl acetate extract of fermented broth an actinomycete strain, identified as Streptomyces 23 24 pratensis exhibited significant antimicrobial activity against Staphylococcus aureus ATCC 29213 with MIC 0.25µg/ml and Mycobacterium tuberculosis Strain H37Rv with MIC 25 0.062µg/ml. The strain S. pratensis IIIM06 was grown on large scale and their broth was 26 27 extracted with ethyl acetate. The extract was subjected to various chromatography techniques which led to the isolation of four compounds whose structures were established as 28 actinomycin C1, actinomycin C2, actinomycin C3 and actiphenol on the basis of spectral data 29 analysis. Actinomycin C1, C2 and C3 exhibited potent antimicrobial activity against S. 30 aureus as well as M. tuberculosis. The isolated indigenous actinomycetes exhibited good 31 antibacterial activity and the study reveals that IIIM06 is a promising strain and could be of 32 great potential for industrial applications. 33

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