Gajula Swarna Kumari et al., Nat Prod Chem Res 2015, 3:6
http://dx.doi.org/10.4172/2329-6836.C1.008

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3rd International Conference and Exhibition on
Pharmacognosy, Phytochemistry & Natural Products
October 26-28, 2015 Hyderabad, India

Evaluation of antibacterial activity of antibiotic producing *Actinomycetes*

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Actinomycetes are the most economically and biotechnologically valuable prokaryotes which produce a wide array of bioactive secondary metabolites. As marine environmental conditions are extremely different from terrestrial ones, it is surmised that marine *Actinomycetes* might produce novel bioactive compounds. Hence, marine sediments collected and were screened. The antibacterial properties of the 12 *Actinomycetes* isolated from hyper saline soils were determined by cross steak plate method and agar well diffusion methods against gram positive and gram negative bacteria. The most active isolates ISA6, ISA8 and ISA11 were subjected to solid state fermentation. Anti-metabolites in the fermentation broth were extracted with hexane, benzene and ethyl acetate. From each extract three fractions were collected using methanol and chloroform (80:20; 50:50; 20:80). Bio-autography is a technique that combines thin layer chromatography with bioassay in situ. Bio-autography based detection of antibacterial activity indicated that isolate ISA6 and ISA8 solvent fractions were active against gram positive and isolate ISA11 solvent fractions were active against gram negative bacteria. The spectral analysis of all the fractions showed maximum absorption ranged from 295-400 nm.

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