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Bioactive metabolites from a species of *Aspergillus* isolated from soil

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Two important fungal metabolites are antibiotic penicillin and the popular cholesterol lowering agent, lovastatin. A fungus isolated from a soil sample associated with roots of the plant *Suaeda maritima* collected from the Puttalam District was used in this research. By studying colony characters, fungal morphology and asexual reproductive characters, the fungus was identified as a species of *Aspergillus*. A pure culture was grown in Potato Dextrose Broth for 21 days and extracted into methanol followed by separation with ethyl acetate to obtain low molecular weight compounds. Crude EtOAc extracts in MeOH were used to determine antibacterial activity against *Bacillus* sp, *E. coli*, *Staphylococcus* sp. and *Klebsiella* sp. using the Kirby-Bauer method. Discs were prepared by absorbing 10 µL of methanolic solutions containing 500 µg of extract and pure MeOH for negative control. A disc containing 25 µg of Amoxicillin was used as a positive control. All assays were conducted in duplicate and the average diameters of clear zones were recorded. Crude EtOAc extract showed 18.25 mm clear zone against *Bacillus* sp., while 18.5 mm clear zone against *Staphylococcus* sp. In the positive control, Amoxicillin gave 12.5 mm and 31.75 mm clear zones respectively for the same two bacterial cultures. Results indicate the presence of strong antibacterial constituent/s in the extract.

The fungus was grown on a large scale in PDA as it was found to be the best medium for growth and bioactivity. The crude EtOAc extract of the fungus was partitioned between hexane and 80% aqueous MeOH. The MeOH fraction was then diluted with water to prepare a 50% aqueous MeOH solution and partitioned with dichloromethane (DCM). All fractions were bio-assayed against *Bacillus* sp. Active compounds were found to be concentrated mostly in the DCM fraction and the hexane fraction. The DCM fraction was chromatographed over a column of sephadex LH 20. Bioassay results revealed that the bioactivity is concentrated in the fractions eluted with DCM : hexane 4:1, and DCM : acetone 3:2. Isolation of the bioactive constituents by further fractionation of active fractions is under way.

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