

Marine Fungal Diversity and its Bioprospecting Potential for Human Health

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Abstract

Fungal biodiversity was extensively surveyed along southeast coast of India. A total of 98 species of fungi belonging to 31 genera were isolated from the mangrove soil samples, and 32 species of 12 genera under 4 families for oleaginous molds and yeasts from the mangrove root-soil. In addition, 45 species of 23 genera belonging to 4 families were documented as endophytes in the leaves of three mangroves. Also, 22 species of 15 genera under 10 families were recorded as lichenized fungi the mangrove areas. Additionally 95 species of 41 genera belonging to 5 families were identified as halophilic fungi from two different solar salterns. Predominant fungal strains were identified based on molecular techniques (18S ribosomal DNA (ITS) sequences) and the sequences have been deposited in the Genbank with accession numbers. Further, bioprospecting the fungi revealed the presence of different active bio-molecules such as citric acid from *Aspergillus niger*, cyclosporine A (CyA) from *Fusarium oxysporum*, taxol from *Fusarium moliniforme*, β glucan from *Pleurotus florida*, 5-Oxa-6-azaspiro oct-6-ene from *Alternaria alternata*, chitosan from endolichenic fungi, isoquercitrin from *Xylaria* sp., ergosterol peroxide from *Fulvifimes* sp., biofuel from *Rhodotorula muciliginosa* and antidermatophytic biomolecules from certain fungi. Above all, cultivation technique has been perfected for the production of edible mushroom, *P. florida* using marine waste.

Keywords - Marine fungi, Diversity, Bioprospecting, Mangrove, Mushroom