Antimicrobial Activity and Molecular Identification of *Nocardiopsis* sp. AHA2 from Deylam Nearshore Sediments

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Abstract

The aim of this study was identification and antimicrobial activity examination of *Nocardiopsis* sp. isolated from Deylam nearshore sediments. Samples were collected from Deylam nearshore sediments on the late September 2014. Identification was done using 16Sr RNA analysis. Antimicrobial assay of the bacterial extracts was performed using standard well diffusion assay. *Nocardiopsis* was isolated and identified according to amplification and sequencing of 16Sr RNA gene. Differential analyses results for catalase and Gram test were positive and for other tests were negative. Antimicrobial assays showed that the sample had more antifungal activity than antibacterial activity against tested pathogenic microbes. Antibacterial activity results showed that the metabolites extracted from samples were active against *Salmonella* sp. (inhibition zone, 8.86 mm) and *Bacillus cereus* (inhibition zone, 7.9 mm). Antifungal activity analysis demonstrated that more inhibition zone was observed against *Aspergillus flavus* (14.4 mm). The results of this investigation revealed that Deylam nearshore sediments were a rich source of rare actinomycetes which produced bioactive compounds.

Keywords: *Marine actinomycetes, Nocardiopsis, Antimicrobial activity, Deylam nearshore, Persian Gulf.*